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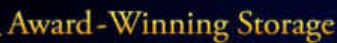
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December 2015 CONTENTS

Reviewed: Apple TV **74**

iMac with 4K Retina display: A high-resolution desktop Mac for the masses **84**

3

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PUBLICATION INFORMATION

December 2015, Volume 32, Issue 12

Apple's services could use a little service

The services group made $5.1 billion in revenue last quarter.
Time to invest in better performance.

BY DAN MOREN

I f the App Store had a theme song, it would probably be The O'Jays' "For the Love of Money." (Apple itself would probably pick something by U2 or—sigh—Coldplay.) During the company's financial results recently, Tim Cook said the App Store pulled in record revenue, which bolstered the company's bottom line for its services division's $5.1 billion revenue.

So yes, the App Store is still doing gangbusters business overall. But I'd also imagine that it's the tentpole propping up the company's services division, which also includes iCloud, Apple Pay, and AppleCare. And much as Apple is a company that focuses on developing and selling products, those services are becoming ever more critical: if iPhones, iPad, Macs, and so on are the bricks of Apple's business, services are the mortar— the stuff that holds the ecosystem together.

SERVICE CALLS

During that same financial call, one analyst asked—in typical roundabout analyst fashion—about how Apple sees its position in services, especially compared to competitors like Facebook, Amazon, and Google, all of whom get a substantial boost from iOS users. Tim Cook's response:

> *Well, the App Store is growing over 20 percent, it grew 25 percent last quarter. And so we feel very good about that. That's*

> *become a sizable business. I would also point out that some of these upgrade programs that are in the market, they sort of begin to look more like a subscription business in terms the way they operate. And so we think that in the aggregate, that they may reduce upgrade cycles, and also the iPhone that has been sold to someone else hits a price point that we're not hitting today, largely, which could help further fuel the services revenue, which we did quite well on last quarter.*

Well, a roundabout question deserves a roundabout answer. Admittedly, it's a call for financial analysts, so they're going to focus on the balance sheet definition of services, rather than what consumers might think of as services.

But the analyst's point remains. Apple's biggest counterparts in the tech industry are benefiting tremendously from people's use of iOS devices. That may not be directly to

Apple's detriment, but it does mean that maybe there are opportunities for Apple to improve its services and win over customers on merits rather than because those services are baked into its hardware and software. I think there are relatively few users who opt for iCloud over Gmail, for example—and I should know, because I'm one of them.

SERVICE INTERRUPTIONS

Apple's only been ramping up its services efforts lately: we've got the App Store and iTunes Store, iCloud (including documents, mail, iCloud Photo Library, iCloud Music Library, etc.) and, most recently, Apple Music. And let's not forget the persistent rumors that a subscription-based TV service may be waiting in the wings.

AS IT IS, APPLE MUSIC IS FINE—BUT IT'S NOT REALLY THE GREAT PRODUCT WE'VE COME TO EXPECT.

What worries me overall about Apple's services is the "set it and forget it" attitude that seems to pervade so many of the company's services. iCloud has seen probably the most improvements over time—to be fair, it was also the most in need of them, and it's a very broad umbrella that comprises a number of different products. But some of the most

egregious problems of Apple's other services have gotten little attention.

That's not shocking. Despite developers' complaints about the App Store—the inability to respond to user reviews, the poor search results, the race-to-the-bottom pricing—I have to imagine that Apple isn't in a rush to make changes when it's raking in money on an upward trend. Unlike Apple's hardware and software products, which the company seems to focus on iterating and improving, the services often seem to be rather staid.

Which makes me wonder about the future of services like Apple Music. It's the newest of Apple's services, and seems to be doing OK, based on numbers shared by company executives in recent weeks. But if it wants to grow such a service, it needs to be committed to making it something more than a streaming service that just appeals to some people and apply the same degree of care and thoughtfulness that it puts into the design of its hardware and software. As it is, Apple Music is fine—but it's not really the great product we've come to expect: case in point, the wide number of opinion pieces about

whether or not people are sticking with the service after the three-month trial is up.

RESTORING SERVICE

Apple's track record with services has always been on the spotty side, with underdeveloped and sometimes downright unreliable products. There's only so much longer that trend can continue when services are set to be such a critical part of Apple's ecosystem. And to the company's credit, it's clearly investing in the infrastructure, building data centers around the country. But it would be good to see the same level of dedication and attention given to the services themselves: I still have frequent iCloud mail syncing problems, iTunes Music Library service interruptions, and slow access to iCloud documents.

In the end, it's hard to shake the feeling that Apple is a hardware and software company at its root, and that services simply aren't its strong suit. Likewise, the Amazon Fire Phone felt untrue to what is at heart a retail company that has traditionally done pretty well in the services arena—and you saw how that panned out.

None of this is to say that Apple can't do services and can't do them well. For all the problems with the App Store and iTunes Store, they've had remarkable success at what they've done. But it's no time to rest on those laurels, because if there's one constant about services, it's that there's always more work to be done. ∎

How to buy vintage technology on eBay

Old Macs, Newtons, iPods—whatever floats your boat is on eBay, and Christopher Phin has the tips that will get it into your hands.

BY CHRISTOPHER PHIN

I t was only after I'd written the first few installments of *Think Retro,* which started about a year ago, that I was hit by a blinding realization: not only could I use this weekly column as an excuse to buy more vintage Apple stuff on eBay, but I could legitimately write these purchases off against tax. Fun and legal; hot damn!

The resulting uptick in my eBay shopping since then has meant I've gotten better and better at picking out and picking up bargains, since for me there's infinitely more joy to be had in rescuing a lovely old Newton or LC or G5 from a trip to the trash, and giving it a dignified and loved retirement after a long and useful life, than in lining the coffers of a professional eBay seller determined to squeeze every buck of profit from his sale. And besides, I'm Scottish, so spending money isn't something that comes easily to me.

Thus, this guide to buying vintage tech on eBay was born, so that you too can play your part in caring for and cherishing retro tech—and, quite coincidentally, picking up for just a few dollars the tech that you once yearned for as a youngster but could never afford. (Till now.)

I'm focussing on eBay here because it's what I use and it's the most global marketplace, but if you live somewhere serviced by Craigslist, Gumtree, Freecycle, or another local equivalent, you should be

checking them out, too, for bargains. Ditto thrift stores and charity shops, and any dedicated forums such as vintageapple on Reddit.

BROWSE

Obviously, one way to look for retro stuff on eBay is just to browse for it. Click the Shop By Category button at the top left, then click See All Categories on the bottom right of that window, and then do a Command-F search for "vintage com..." to jump to the link for Vintage Computing. Click the link, then—for the juicy stuff, actual computers—click Vintage Computers & Mainframes and check the box for Apple under Brand in the sidebar. Although I'll show you some smarter, less laborious ways to find stuff, it's still worth making time every now and then to browse in this way; it's just quite fun, and serendipity can throw up some wonderful things.

In the link above I have the list sorted so that auctions that are about to end are shown at the top, which is a great way to snag a bargain, but if you check in regularly, switching to Newly Listed lets you just see the latest additions.

BID LOW—YOU'RE IN NO RUSH

This stuff has hung around for decades. It's not going anywhere, and unless you're after something super rare then there will always be another one for sale soon. So: be prepared to lose. "Bid low, lose; bid low, lose; bid low, win" is much more satisfying than "Bid high, win." (Of course, if it's something you just really want or, ahem, you have a looming deadline, you might have to bid high, or use Buy It Now.)

USE BEST OFFER

Some listings, though, have the option to Buy It Now or make a Best Offer, which means the seller will entertain lower prices than the figure they've set for buying something outright. It's usually a sign in my experience that they know they've set the Buy It Now price a little high and are just hoping for a schmuck to pay it.

Don't be that schmuck. If there's a Best Offer option, offer a lower bid. Not insultingly low, as they'll reject you outright, but low enough that if they accept, you'll be delighted— maybe 60 percent of the Buy It Now price. Usually what will happen is that they'll come back with a higher counter-offer, which you can either accept or counter again yourself, and so on until one of you blinks. There's the option of adding notes with your

BID LOW AND expect to lose. The world isn't going to run out of old Power Mac G5 towers anytime soon, and it'll be that much sweeter when you finally snag one at a major deal.

offers, so asking if they'll throw in a mouse with the Quadra you're haggling over or something—hey, it might work.

BID LOCAL

Especially on vintage Macs, postage can be frighteningly expensive—and downright petrifying if you're shipping internationally—so use the Item Location filter in the sidebar to find stuff that is local to you. You can limit it to your whole country, or set a smaller radius within which you're happy to drive to collect. Again: be prepared to lose several times before you find a local bargain. ("Going to pick up an eBay purchase" is actually a great excuse to explore your local area if you need a reason.)

BID AT THE LAST MINUTE

I hate automated sniping systems, but it's still a sad truth that the best way to snag a bargain is to game the auction system as much as possible. Put bids in too early and the price has a habit of bubbling up, as people get caught up in a bidding war. But waiting till the dying seconds of an auction before putting in a bid which might not be high enough to cinch the deal? Screw extreme sports; this is my adrenaline rush.

Of course, the danger is that you'll just forget to bid, so set a reminder, perhaps with a quick "Hey, Siri."

Better still, install the eBay app on your iPhone, add the thing you want to your watch list, and it will ping a notification when bidding is about to close. And better still, use an Apple Watch. You'll get notifications of closing auctions, and you can even bid right from your wrist—even if your hands are full, you have your nose, right? There's no excuse not to own a G4 Cube.

TAKE A RISK

Often, vintage hardware is listed as "spares and repairs" or "sold as
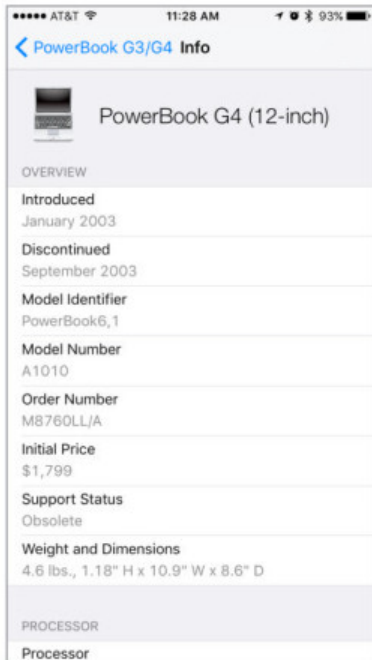
MACTRACKER (on iOS and Mac) can help you find part numbers to better refine your searches.

SEARCH BY PART NUMBER

You can of course also search for specific items. The problem with this is that searching for, say, "imac g4" will throw up all sorts of parts and accessories and weird other irrelevancies rather than just showing you a list of beautiful lamp-like iMacs, even if you limit your search to a relevant category. You could add further search terms to try to narrow things down—"imac g4 17," say, for a specific size—but a useful trick is to search for the part number of the thing you want.

True, not every seller will list it, and some will use the wrong one, so it's not foolproof, but it's nevertheless a good idea since it should cut out everything extraneous. My preferred way of finding part numbers is with the Mactracker app (available on the Mac and iOS App Stores)—look for Part, Order, or Model Number on the first tab.

SET UP SAVED SEARCHES

Once you're looking at a list of things you're interested in on eBay, whether as the result of filtering the list of everything in a category you're browsing or by creating a search string that finds specifically what you're looking for, you should save it so you can easily jump to it later in My eBay—such as when you've lost an auction by following my "bid low"

seen" simply because the seller doesn't have the time or expertise to confirm it's working. Chances are, though, it will be, and if the price is low enough and it's easy to pick up, there's no harm in sticking a low bid in. Even if it proves not to work, it might be a relatively simple fix—a new battery, say—or you can often make more money than it took to buy it by stripping it down and selling it for parts.

advice, and need to find another example.

You can click Follow This Search at the top of the list of items you searched for, which will, by default, send you emails when new items match your criteria, but since clearing my inbox is a fight I'm in no danger of winning anytime soon, I'd rather keep notifications like this away from Mail. Instead, I turn these search results pages into an RSS feed simply by adding **`&_rss=1`** to the end of the URL and hitting Return. I subscribe to this in my RSS reader—currently NetNewsWire,

though I had been using Reeder for years—and that way I can easily see if there's anything I might want to bid on when I'm scanning my feeds in the morning.

This works especially well for items that are rare not because they're inherently unusual or expensive, but just because they're little hyper-specific things you want that nobody ever thinks to sell. There might be no matches for sale at the moment you search for them, but subscribe to the results in RSS and as soon as one pops up, add it to your watch list and then bid. ∎

TarDisk Pear first look: Upgrade your MacBook flash storage in a few minutes

A new storage device can boost the amount of storage in your laptop without needing to swap out the built-in flash memory.

BY ROMAN LOYOLA

Apple no longer uses hard drives in most of its laptops in its current lineup, opting for speedy flash storage. (The always-forgotten non-Retina 13-inch MacBook Pro uses a hard drive.) Flash storage, however, doesn't have the low price per gigabyte that hard drives offer. If you bought a Mac laptop recently, you probably bought it with 128GB or 256GB of storage. That's well short of the terabytes offered in hard drives nowadays, so it's possible you've filled up your flash storage space.

You can buy an external hard drive to lug around with you to alleviate your storage crunch, but the new TarDisk Pear (tardisk.com) could be a more attractive solution. TarDisk Pear is flash storage that finds a permanent home in your laptop's SDXC slot, but it's not like using an SDXC card. It works with the internal storage of your MacBook, and the result is more storage space.

TarDisk Pear is available in 128GB ($150) or 256GB ($400) capacities for the MacBook Pro and MacBook Air. (You can check TarDisk's website to see a list of compatible laptop models.) The company sent me a 256GB TarDisk Pear for the 15-inch Retina MacBook Pro. This article takes a look at how TarDisk Pear is implemented, and I'll follow up with a full review after running it on my laptop after several days.

INSTALLATION

With about 123GB of data in my laptop's storage, the installation took less than 10 minutes, not counting the time it took to do a Time Machine backup. TarDisk Pear requires installation software to run on your Mac.

After backing up my laptop, I slipped TarDisk Pear into the laptop's SDXC slot. It fits flush with the MacBook Pro's case, and to remove it, the company recommends using the edge of a

TARDISK PEAR (left) next to an SD Card, for scale.

credit card (go.macworld.com/tardiskremoval) to pry the TarDisk Pear out.

Before I installed TarDisk Pear, I took a screenshot of the Storage tab in About This Mac.

The TarDisk Pear software pairs the laptop's flash storage with the TarDisk Pear. When the installation is complete, a window confirms that the installation was successful.

Interestingly, the Mac's hard-drive icon was replaced by TarDisk Pear. You can change the icon back to a standard hard-drive icon by selecting the drive, pressing Command-I, and in the window that opens, click on the icon in the upper left and press the Delete key.

In About This Mac, the Storage tab
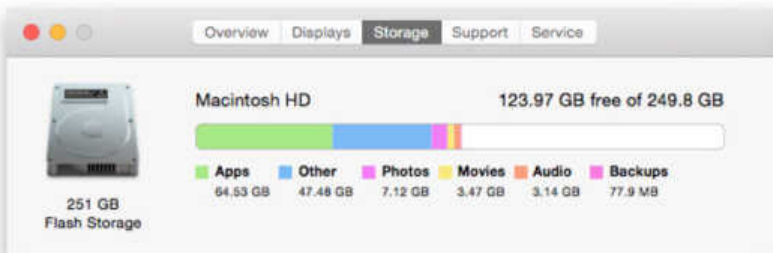
BEFORE INSTALLING TarDisk Pear, I had about 250GB of flash storage, about half of which was filled.

18

Your MacBook was 250.1GB, and is now 505.7GB.
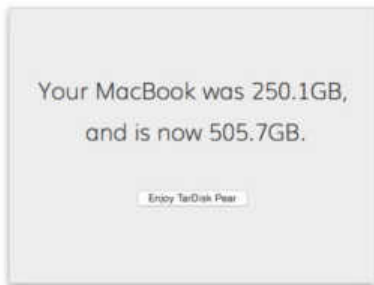
Enjoy TarDisk Pear

LOOK MA, more storage space!

shows your storage as two devices, even though it acts as one device. In Apple's Disk Utility, the total storage is seen as one drive.

IN USE

Since I installed the TarDisk Pear, it's been business as usual for my Mac. It starts up as quickly as it usually has, and I haven't noticed any issues with speed. I haven't had any problems reading and writing files so far.

A TarDisk representative told me there's a nearly imperceptible performance hit when the storage needs to perform a data seek. The company's FAQ says that using TarDisk Pear affects battery life, but the effect is minor—you'll lose about 5 minutes during a 7-hour battery cycle.

I'll spend more time using the TarDisk Pear to see how it handles everyday use, and I'll put my findings in a full review. I'll include benchmarks and other factors that may influence a buying decision. So stay tuned for more information. ■
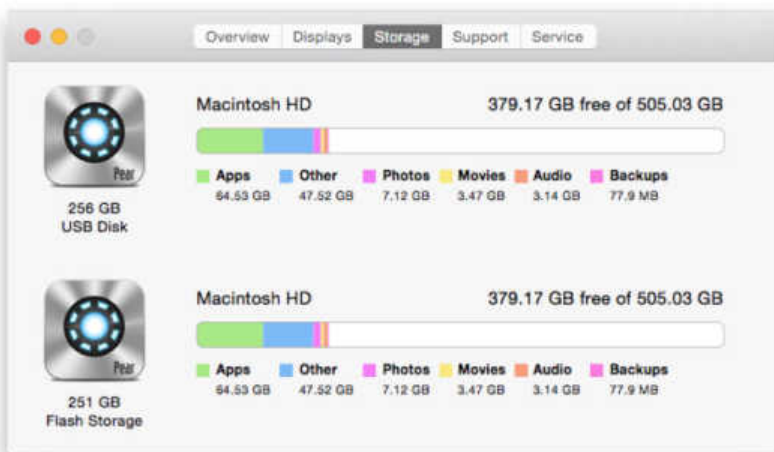
TWO DRIVES that act as one.

Reviews

The Latest Mac Products
Reviewed & Rated

INPUT DEVICE

APPLE MAGIC TRACKPAD 2: SOLID PERFORMER DOESN'T FEEL ESSENTIAL

BY SUSIE OCHS

THE MAGIC TRACKPAD 2 is shockingly large and blindingly white. It looks kind of like a futuristic thing you'd find in a high-tech kitchen, like a smart scale or a wireless charging station or a heating pad that keeps your coffee at the perfect temperature for hours. But this Cheeto-unfriendly slab is really a giant, standalone version of the Force Touch trackpad in this spring's 12-inch MacBook, along with the later MacBook Pro refresh.

The Magic Trackpad 2 brings Force Touch to the desktop: It's an option with the new iMacs (or you could choose the Magic Mouse 2), and available on its own for $129 (go.macworld.com/magictrack-pad2). With plenty of room to take advantage of Apple's entire repertoire of gestures, it's a fun trackpad to use. But until its marquee feature—Force Touch—is utilized a little more widely, it's not a must-have for most people.

MAGIC TRACKPAD 2

AT A GLANCE

The Magic Trackpad 2 gives you tons of room for all of Apple's gestures, but the only new one, Force Click, doesn't do a lot just yet.

PROS

• Huge area for clicking.

• Silent clicking option, among other customizations, in System Preferences ➤ Trackpad.

CONS

• Not Cheeto-friendly (Pro tip: Pirate's Booty has lighter colored cheese powder).

PRICE WHEN RATED

$129

COMPANY

Apple
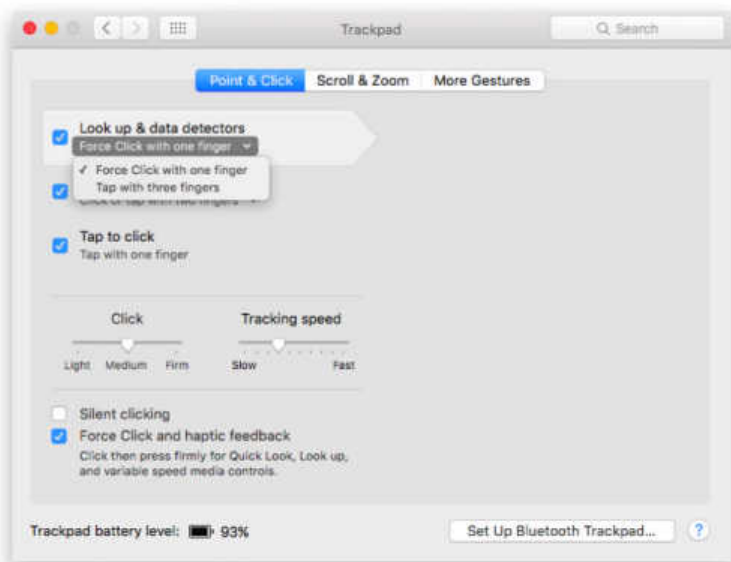
ONE WAY TO AVOID errant Force Clicks is to change this setting back to three-finger tap.

IT'S MY TRACKPAD, I'LL FORCE CLICK IF I WANT TO

Pairing the 6.3-by-4.5-inch Magic Trackpad to my Mac with Bluetooth was a snap. It charges with an included Lightning cable—which means, first of all, that you have another Lightning cable for charging your phone. Hooray! Beyond that, plugging the trackpad into a Mac with the Lightning cable pairs it automatically, in case Bluetooth ever decides to be a jerk about pairing.

But once I started using it, I ran into a learning curve. I kept absent-mindedly resting my palm or pinkie finger on the trackpad, making my tap-clicks act like right-clicks. That's probably just bad posture on my part, something I could (and probably should) train myself to improve over time.

The other problem is the errant Force Clicks. When trying to click-and-drag text, images, or files, I kept accidentally pressing too hard, Force-Clicking when I wanted to just click. I'm trying to select text, and instead I'm getting the definition of a word like *the.* There are a few ways to get around this. In System Preferences ➙ Trackpad, I could uncheck Force

Click And Haptic Feedback, but that turns off all current and future Force Click features. On the same Preferences pane, I could uncheck Look Up & Data Detectors or click the downward-facing arrow to change it from Force Click With One Finger to Tap With Three Fingers, which is how it works on trackpads without Force Touch.

I know it's not exactly fair to compare the multilayered touchscreen of my iPhone 6s with the Magic Trackpad, even if the gestures are pretty similar and they did name it magic, after all. But my iPhone is just better at recognizing what I mean when I interact with it, from better rejection of accidental touches to better understanding my intent when I hard-press the screen. I'm sure I'll get used to the Magic Trackpad—in fact, one setting in Accessibility is already helping a lot. More about that later.

ERGONOMICS ARE A DRAG

Trackpads aren't typically comfortable for me to use all day. I love the gestures, but I do a lot of clicking and dragging to select text and drag files around. Holding my thumb down on the trackpad while moving the cursor with my index finger usually leads to shooting pain across the top of my hand before the day is out.

The Magic Trackpad is helping me retrain myself to only tap to click, and tap with two fingers to right-click. To click and drag, now I just tap with three fingers and drag away—no pressure needed at all. It's so much more comfortable. After a little practice, I could even use it to crop photos.

To enable three-finger drag, head to System Preferences ➜ Accessibility ➜ Mouse & Trackpad, and click Trackpad Options. Click the box for Enable Dragging, and select three-finger drag. Thanks to this feature, I'm tapping instead of clicking almost exclusively, which should be better for my hands, and reduce the number of accidental Force Clicks.

THE MAGIC TRACKPAD has a bit of tilt to it, but trackpads in general are uncomfortable for me to use for long periods of time.
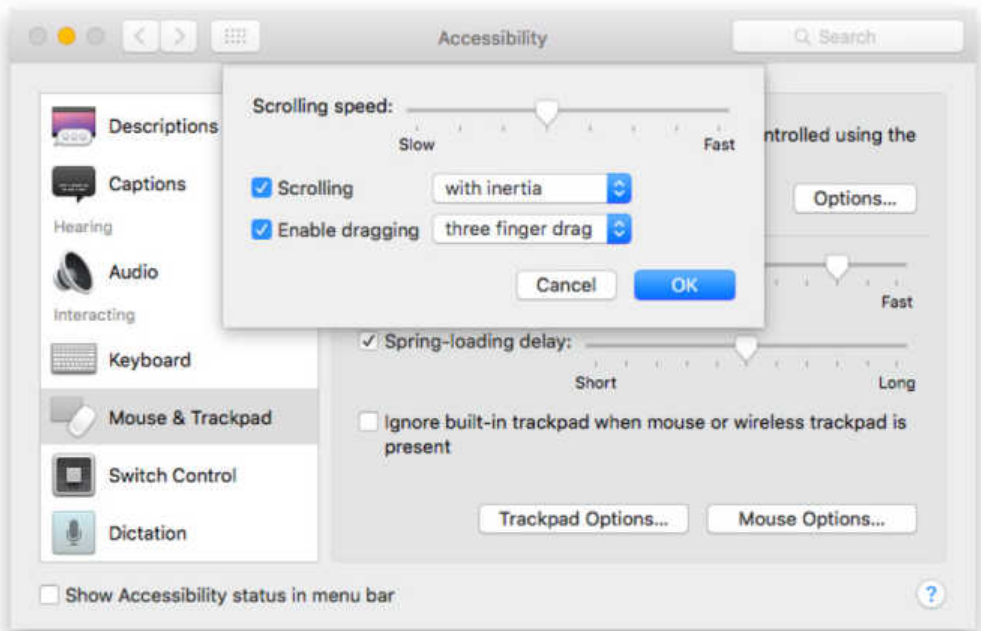
BOTTOM LINE

If you're buying a new iMac, I would definitely choose the Magic Trackpad 2 over the Magic Mouse 2 (See our review on page 24). But if you've got a Mac without a Force Touch trackpad, you might consider waiting until Force Touch becomes more ubiquitous and essential than it is now. Force-clicking a file in the Finder to Quick Look it is convenient, but not a game-changer. However, with more developer support, Force Touch could eventually be a handy enough feature to justify a new trackpad. ■

MOUSE

APPLE MAGIC MOUSE 2: MOUSE UNABLE TO CONJURE UP ANY INNOVATION

BY ROMAN LOYOLA

APPLE'S NEW MAGIC MOUSE 2 (go.macworld.com/magicmouse2) isn't really that much different from the original Magic Mouse. It has major changes that affect how the mouse moves and a new built-in battery. But there's nothing about the Magic Mouse 2 that will make you ditch your current mouse—even if it's an original Magic Mouse.

WHAT'S NEW ISN'T OBVIOUS

The exterior design of the Magic Mouse 2 is almost the same as the Magic Mouse. It still has a white plastic sliver that rests atop an aluminum case, with no visible buttons or scroll wheel.

Flip the mouse over, and you'll finally see a difference. The Magic Mouse 2 has a built-in rechargeable lithium-ion battery, so it no longer needs a removable battery cover. Where the latch for the cover used to be is now a Lightning port that is used to recharge the battery.

With the charging port on the bottom of the mouse, it means that you can't use the Magic Mouse 2 while it's plugged in. People have been outraged by this design decision—those same outraged people also don't have the full story about the Magic Mouse 2 or they've never used it. Apple has said that the Magic Mouse 2 (along with the Magic Trackpad 2 and the Magic Keyboard) are fast-charging devices; the mouse can get nine hours' worth of battery life in about two minutes. So, in the time it takes for you to visit the bathroom, stand up because your Apple Watch told you to, or go to the kitchen to grab a beverage, your drained Magic Mouse 2 will have a charge that will last a typical working day. Really, the charging port on the bottom of the mouse isn't a problem—but sometimes people need any excuse to be outraged over Apple products. Apple's press release says a fully charged battery can last "about a month or more."

Apple changed the plastic rails on the bottom of the mouse. Combined with a lighter weight, the result is a smoother, faster feel when you move the Magic Mouse 2, a vast improvement on its predecessor, which had a rough, grinding feel. Steven Levy has an interesting story on Apple's Input Design Lab (go.macworld.com/appledetails) and how the Magic Mouse 2's rails are an example of Apple, "Sweating the details."

BEEN THROUGH THIS BEFORE

Much of what I said in my review of the Magic Mouse (go.macworld.com/magicmouserv) nearly seven years ago holds true for the Magic Mouse.

MAGIC MOUSE 2

🔌🔌🔌½

PRICE WHEN RATED
$79

COMPANY
Apple

THE MAGIC MOUSE 2 has a built-in rechargeable battery, so a battery cover is no longer needed.

The Magic Mouse 2 has an extremely low profile, so if you like to rest the lower part of the mouse against your palm, you may not be able to do so with the Magic Mouse 2.

CHARGING the Magic Mouse 2.

The Magic Mouse 2 still has only two buttons. For many users, that's enough, but for some power users, it's not. There's no physical separation between the right and left buttons, but I never accidentally pressed the wrong button. When you click a button, the whole top of the mouse presses down with an audible click sound.

Multi-Touch was introduced in the Magic Mouse, and it's still in the Magic Mouse 2. Multi-Touch is relied on for scrolling, going forward or back in iPhoto or Safari, zooming, and more but there are no new gestures. In my Magic Mouse review, I wrote, "I'm left feeling that Multi-Touch on a mouse has the potential for more." Consider that potential still untapped.

One pet peeve I had with the Magic Mouse—and thus, still have with the Magic Mouse 2—is that its symmetrical design makes it impossible to tell by touch if the mouse is positioned with the optics at the top. I move Macs around a lot in the *Macworld* offices, and if I had a dollar for every time I started using a Magic Mouse upside-down, I'd probably be able to buy a new Magic Keyboard and still have cash left over.

Magic Mouse 2 requires OS X El Capitan and Bluetooth. I tried to

NO MORE FUSSING with Bluetooth pairing: When you connect the Magic Mouse 2 to your Mac using a Lightning cable (included), El Capitan automatically creates a Bluetooth pairing.

26

connect to a Yosemite Mac to see what would happen, and the Mac didn't recognize the Magic Mouse 2 at all.

THE STATE OF THE MOUSE

The Magic Mouse 2 doesn't offer anything innovative as far as user input goes. Apple offers Force Touch support in El Capitan, and to take advantage of it, you need the new Magic Trackpad 2 or one of the current MacBook Pro models or the MacBook that's equipped with a Force Touch trackpad. (The current MacBook Air doesn't have a Force Touch trackpad, but don't be surprised if it's introduced in a future Air upgrade.)

Could the Magic Mouse 2 support Force Touch? Probably not in its current state. I don't know what it would take to implement Force Touch sensors underneath the top of the Magic Mouse, but I'm sure it's not a trivial task.

Apple has a pattern of not implementing new features in older devices in order to get people to adopt the new device. The lack of Force Touch in the Magic Mouse 2 could be both a difficult thing to do

THE MULTI-TOUCH GESTURES that were introduced with the original Magic Mouse are still available with the Magic Mouse 2.
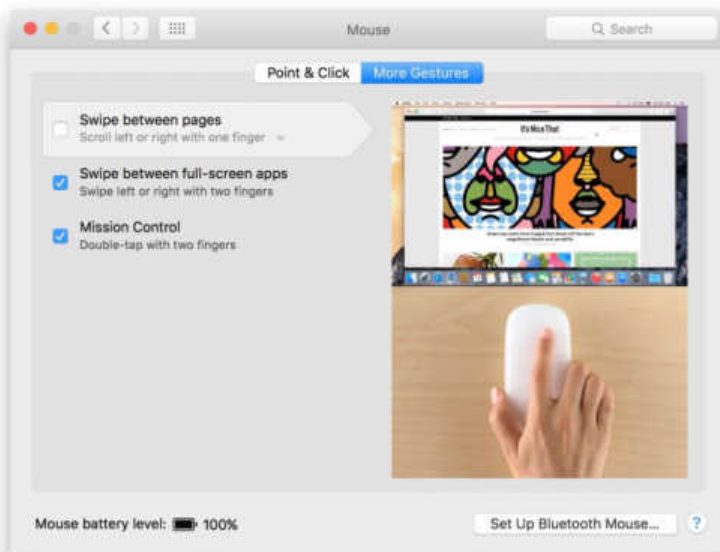
and a way to get people to switch to a Magic Trackpad 2. True, Force Touch isn't necessary for using your Mac. But Apple could, in t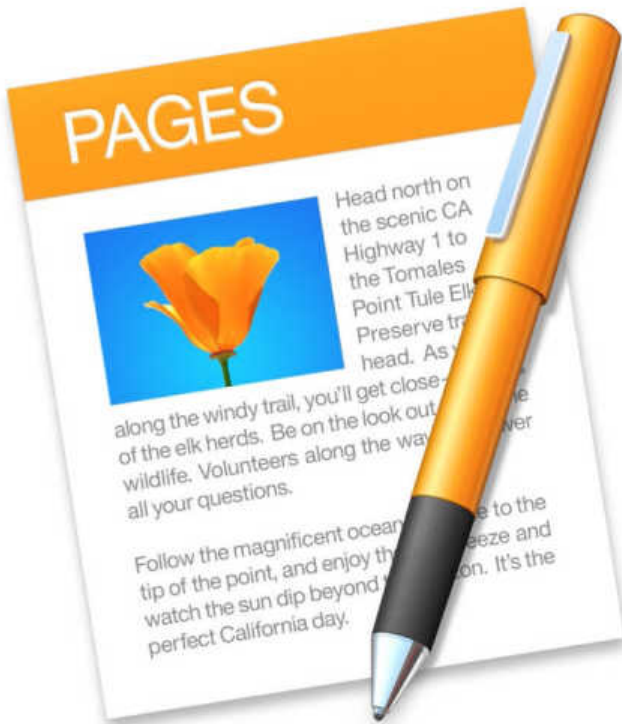he future, introduce a vital interface element that requires a trackpad, forcing people to at least introduce a trackpad alongside a mouse and keyboard. (Maybe you already do this if you're a MacBook user.)

BOTTOM LINE

I think we can agree that input devices might be the most personal parts of a personal computer. Therefore, opinions about input devices like mice are highly subjective, and my reasons for not liking Apple mice are a matter of taste and how they fit my personal ergonomics and way I use a mouse. (As a matter of perspective, my favorite mouse is the Logitech Performance MX; go.macworld.com/perfmx.)

   That being said, I think I can be objective in evaluating the Magic Mouse 2; when I reviewed the original Magic Mouse, I wrote that it "successfully combines design and usability." That still holds true with the Magic Mouse 2: It has a stylish design (maybe dated?) that works for a lot of people. If you're a current Magic Mouse user, is the rechargeable battery enough for you to upgrade? Yes, if you're highly conscious about the environment. Otherwise, there's nothing about the $79(!) Magic Mouse 2 in terms of user input that makes it a must-have. ∎

PAGES 5.6: A LOT PACKED INTO A TINY VERSION INCREMENT FOR MAC

BY GLENN FLEISHMAN

I KNOW THAT MANY Pages users have stuck with version 4, also called Pages '09. The latest release of Pages 5 (apple.com/mac/pages), however, may restore some of the features you were holding on to. Version 5.6 is fundamentally the same program as 5.5, but it's a bigger jump than the 0.1 increment would indicate.

A host of typographic refinement has returned, providing support for the wealth of OpenType features that allow more sophisticated "typeset-

PAGES 5.6

♦♦♦♦

PRICE WHEN RATED
$20

COMPANY
Apple

ting" in Pages that takes a user closer to what InDesign and other layout software can provide. This is a return, as most features were available in the previous Pages release, and were missed by some—apparently enough to resurrect them.

LOOKING BACK, LOOKING OUT

Macworld readers frequently complain about and have questions about moving files among various releases of what used to be called the iWork suite: Pages, Numbers, and Keynote. Updates to all three introduce more backward compatibility, a rare move for Apple, which abhors sentimentality and dragging itself down to allow legacy support.

Pages 5, originally released in 2013, could only open Pages '09 (version 4) documents. If you wanted to import Pages '06 (version 2) and Pages '08 (version 3) files, you had to retain Pages '09. As of Pages 5.6, however, you can open files from version 2 onward, which helps provide more continuity for those who retain older formats.

In the ongoing disappointment that is the web app version of Pages for iCloud, at least some progress has been made: iOS and Android users can now at least view Pages documents, which required workarounds before and were ugly. Of course, you still can't edit those documents.

YOU CAN NOW PREVIEW iCloud Pages documents to Android and iOS but not edit them.

Because Pages is only available for OS X and iOS, it's always been important to be able to import and export files. Apple notes that Word compatibility was improved for "charts, text overflows and non-rectangular masks," as well as generally.

I've long seen trouble with Pages 5's ability to take a document with Track Changes enabled and export to Word formats in a format that can be reliably opened in Microsoft apps. In many cases that I've experi-

enced, the exported .doc or .docx file is 10 times or more larger than the original Pages file. Pages 5.6 seems to no longer bloat the file, which is good progress, and an exported file that previously had caused crashes when re-exported didn't bring down my copy of Word.

The release notes also mention new AppleScript options available for PDF and EPUB export, which will delight those who already (or want to) automate the use of Pages as a layout engine. EPUB export is supposed to be better, but because how one formats and what one puts into a Pages document can cause dramatically different ebook outputs, I can't find test cases; it's something to watch over time.

Finally, in a welcome improvement for people who rely on VoiceOver as a keyboard and mouse substitute, or who prefer it, Pages now incorporates VoiceOver support for adding and reviewing comments and tracking changes. I'm not a regular user, but I tested it out, and it seemed as intuitive and well-supported as other uses of VoiceOver elsewhere.

It's still somewhat disappointing that TextEdit has more import and export power than Pages 5 for standard text interchange formats, however.

Pages 5.6 rolls up a lot of bits and pieces, too. For instance, you can use Split View in El Capitan to go full screen with Pages on one side. Force Touch for the 12-inch MacBook and the new Magic Trackpad 2 is supposed to work by letting you force-click images and editing, but I was unable to find any documentation or get it to work through trial and error.

The Media Browser receives an overdue update so that it's fully compatible with Photos for OS X, offering collections, moments, favorites, and shared albums to be viewed within Pages. And there are new templates and some additional chart support for reference lines and image-based chart styles.

JUST MY TYPE

From the earliest days of what was once known as desktop publishing (DTP), software tried to emulate the sophistication of what could be done in graphic design before computers. I have the bias of
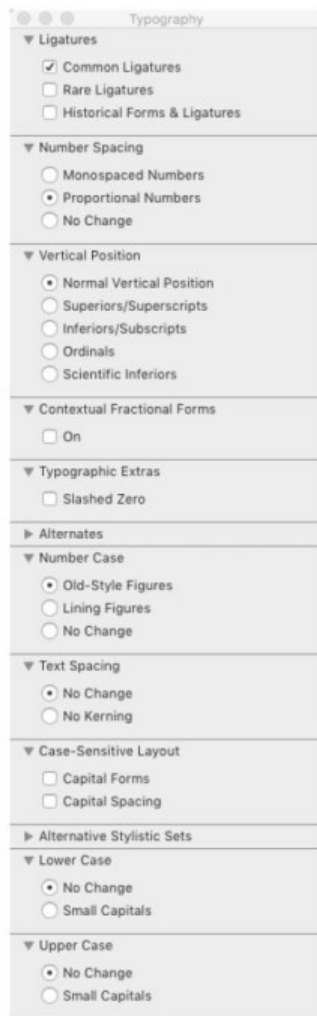
OODLES OF OPENTYPE OPTIONS are available with fonts that have designed in the extras.

having been trained as a typesetter and a DTP "artist" from 1985, but it's verifiably true: Hand-set "cold" type and hot lead from a Linotype or Monotype could produce richer looking documents than could be forced out of DTP for many years.

While QuarkXPress and PageMaker matured, InDesign finally pushed things over. Its development alongside OpenType, broadly supported by operating systems and font makers, took us into something approximating a golden age by the turn of the last decade.

However, Pages reverted. Pages '09 included a fair amount of accessible OpenType support, which was dumped in the ground-up rewrite of Page 5. Now, we've got this richness back. Many users may ignore it entirely, but the OpenType features allows you to set options that in turn allows Pages to make smarter choices about type and layout based on what you're trying to do—you engage in less fuss and things look better.

The OpenType features are hidden, like all gems. Select Fonts ➜ Show Fonts (Command-T), and then with a text insertion point or text selected (from the gear menu in the palette) select Typography. The options that appear arise from OpenType features present in the selection or at the insertion point. If you have a font installed like Adobe's Minion Pro, you gain access to a huge number of features.

By selecting ranges of text, you can apply features selectively, although some of them are exclusive and the controls don't reveal this well. For instance, if you want to use old-style figures (sometimes called "lowercase numbers"), you can select an entire range of text, and apply that control (Number Case ➜ Old-Style Figures). But if you select some capital letters to switch to true small capitals—not shrunken uppercase, but a separate set of separately drawn lowercase-height letters—and then apply the

	MINION PRO
Unmodified	In 2015 C.E., affluent families find standards actually fine.
Old style, small caps, ligatures	In 2015 C.E., affluent families find standards actually fine.
Plus rare ligatures	In 2015 C.E., affluent families find standards actually fine.
True small caps	IN 2015 C.E., AFFLUENT FAMILIES FIND STANDARDS ACTUALLY FINE.
Stylistic sets 1 & 2	a b c d e f g h i j k l m n o p q r s t u v w x y z
Aligning, monospaced	0123456789
Aligning, proportional	0123456789
Old style, proportional	0123456789

TYPOGRAPHIC REFINEMENT has returned into Pages 5.6.

old-style figure setting, the small-caps setting is overridden.

These OpenType settings can be included in Pages' styles, however, both for character styles and paragraph, making it easier to identify and apply specific overrides, such as small-caps settings for initialisms.

These typographic additions improve typesetting quite a bit, but the presentation and application derives entirely from systemwide type settings, so the interface feels quite weak within Pages. (You can use these controls in TextEdit, for instance, and other software that supports rich-text formatting via the Fonts panel.)

PAGES UP, NOT PAGES DOWN

Many of us in the community worry that Pages, like so much of Apple's software, gets neglected until it's almost beyond too far out of date to make sense that the company will release an upgrade. Pages 5.6 doesn't put the lie to that, but it's a significant change for software that, based on online forums and reader feedback, many people use.

Updates like this that move the product both forward and restore missing functionality from Pages '09 are welcome, and we can only wish to see more of the same. ■

STORAGE

DAISYDISK 4: NOW FASTER THAN EVER AT CLEANING OUT UNWANTED FILES ON YOUR MAC

BY J.R. BOOKWALTER

ALTHOUGH SOLID-STATE DISKS (SSD) are lightning fast compared to poky old hard drives, they're also far more expensive, which is why Mac users have had to with more restrictive internal storage than in years past. It's a trade-off: Speedier disk access, but less room for files.

One way to maximize this smaller capacity is to carefully monitor which files—especially big ones—take up that space and then terminate them with extreme prejudice. DaisyDisk 4 (daisydiskapp.com) is a utility app made expressly for this purpose, and it's as attractive as it is handy.
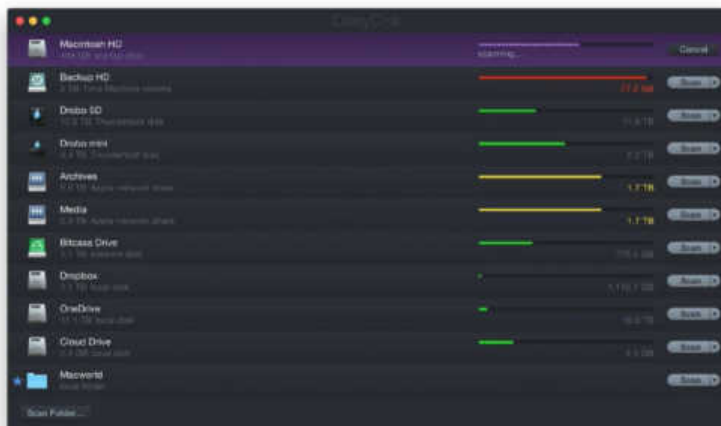
DAISYDISK 4

♦♦♦♦

PRICE WHEN RATED
$10

COMPANY
Software Ambience Corp.

A SCANNER DARKLY

In terms of functionality, DaisyDisk 4 hasn't changed much from previous versions. Launching the application presents a list of all mounted volumes, and I do mean all: In addition to local storage, the software can root out folders and files on network-attached storage or cloud services mounted on the desktop like those offered by ExpanDrive and Bitcasa.

Click the Scan button next to the drive you want to calculate; Daisy-Disk can also run concurrent scans by initiating multiple drives at once. In addition to volumes, there's an option at lower left to scan a specific folder, which can then be marked a favorite so it always shows up alongside your disks.

By default, scans are done in Normal mode, hiding files—such as other user folders—you don't have sufficient access privileges to. Tucked under the downward triangle is an option to scan in Administrator mode instead, which causes that drive to be highlighted in purple. This feature isn't available on the Mac App Store version due to sandboxing limitations, but those customers can download the web edition and unlock full functionality free of charge.

Appearance-wise, the traditional gray title bar along the top has been consolidated into the rest of the window. The darker, slightly flatter user interface is now more in line with the modern OS X look and feel, while color-coded fuel gauges show at a quick glance which disks are in need
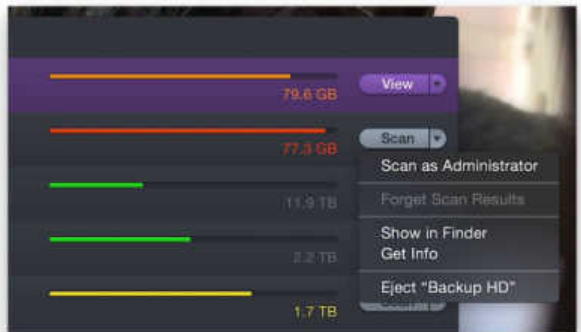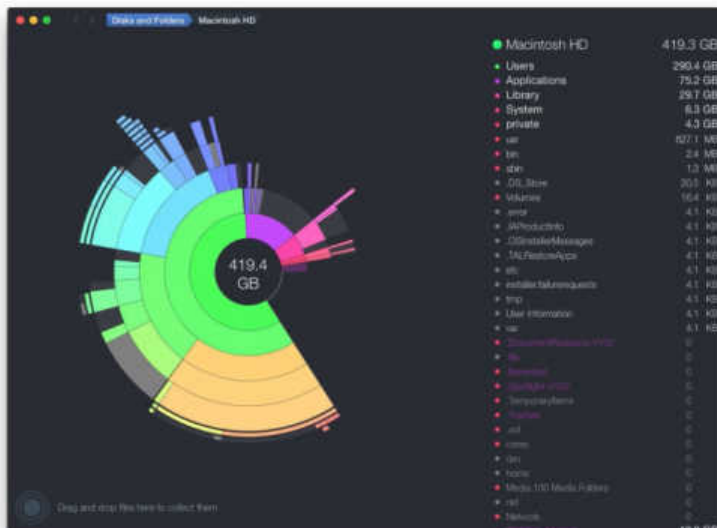
of a little TLC.

START YOUR ENGINES

Perhaps the first thing you'll notice about DaisyDisk 4 is the dramatic increase in performance. Scans now happen in seconds rather than minutes, depending upon the type of media and processor speed. Naturally, SSD storage and quad-core CPUs provide best results, with network drives falling at the slower end of the spectrum, since they depend more on Internet bandwidth.

A KEY DIFFERENCE between the retail and Mac App Store versions of DaisyDisk 4 is the ability to scan in Administrator mode for complete access to a volume.

It took about a minute and 20 seconds to scan the 500GB flash storage inside my mid-2012 MacBook Pro with Retina Display—not bad, considering it's almost 80 percent full right now. A Drobo mini containing four 1TB 7200 rpm notebook hard drives added only a few seconds, completing the initial scan in a minute and 31 seconds flat.

After scanning, DaisyDisk displays drive contents in two ways: A

FOLDERS OR FILES can be viewed in graph or list view, making it easy to see which ones are consuming the most space on your drive.

vibrant, colorful "exploded" graph showing where large files are lurking, and a list of folders and files, sorted from largest to smallest. After identifying space-hogging content—a task aided by QuickLook previews using the spacebar—drag-and-drop unwanted folders or files to the Collector at the bottom of the window, where they can be rejected or deleted in a few clicks.

For only ten bucks, DaisyDisk is a simple, convenient utility for every Mac owner, and it gets the job done well for less technically inclined users. I'm still partial to WhatSize ($15; whatsizemac.com), which trades the lower price and good looks for a more detailed, robust feature set including duplicate file detection and one-click cache cleaning, but quite happy to have both in my arsenal.

BOTTOM LINE
DaisyDisk 4 may not look like a significant improvement on previous versions, but the adoption of a new OS X aesthetic and big performance gains make it a worthwhile update just the same. ∎

Hot Stuff

STEELSERIES NIMBUS

If you're serious about gaming on the new Apple TV, take the plunge on a controller: Many games are better with buttons and analog sticks as opposed to the Siri Remote's tiny touchpad. SteelSeries just released the excellent $50 Nimbus controller for Apple TV (steelseries.com), which offers the best combination of feel, functionality, and starting price. It takes inspiration from Microsoft's Xbox One gamepad, albeit with symmetrical analog sticks like on PlayStation controllers. The Nimbus fits really well in your hands, the buttons and sticks are responsive, and it pairs easily over Bluetooth with the Apple TV.**–ANDREW HAYWARD**

DROP SCALE

Drop's $100 Kitchen Scale (getdrop.com) turns your iPad into an even more useful cooking scale, going beyond simple step-by-step recipes to help you measure ingredients. It's been on the market for a while, but the fact that its app was exclusive to the iPad kept some people from shelling out for the scale. Now Drop has an iPhone app for iPad-less bakers, plus cocktail recipes to sweeten the deal. When Drop launched its iPad app, it was chock full of recipes for baked goods, which was fitting since baking tends to be more precise in terms of ingredient measurements than standard cooking is. But the app has slowly added recipes for savory items like burgers, and now includes a recipe section devoted to cocktails. Just place your glass on the scale, pick a drink recipe in-app, and start pouring. Drop's expansion into savory food and drinks beyond pastries is a welcome one. **–CAITLIN MCGARRY**

Hot Stuff

MISFIT SHINE 2

True, activity trackers are a dime a dozen these days, but Misfit's $100 Shine 2 (misfit.com) stands out for its focus on style and subtlety over flashing LED step counts. The Shine 2 ships with a 3-axis accelerometer and 3-axis magnetometer, which Misfit says will track activity and sleep more accurately. The new wearable also has improved capacitive-sensing tech, which means it will respond to your taps more quickly. That was a big problem in the original Shine— because the device has no LED screen, you have to prompt the tracker to activate by tapping its round, pebble-like face. Misfit also paired the new device with its Link app, so you can set up the Shine 2 to act as a remote control for playing music, take selfies, and a variety of other functions using IFTTT recipes. The Shine 2 is smarter and faster than its predecessor, but it's also thinner and now comes in rose gold, which is the hottest color in technology these days. (See: Apple, Samsung, and HTC's newest flagship phones.) It has the same battery life: about six months with no charge necessary—though you'll have to replace the battery if it dies. .—**CAITLIN MCGARRY**

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TO BEAT CANCER.

ALONE.

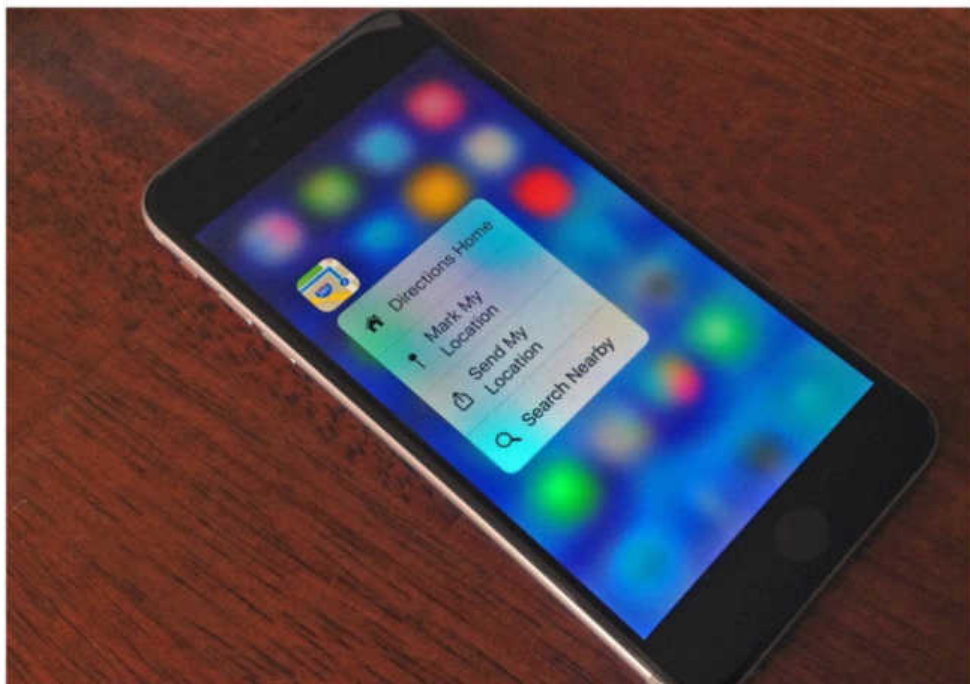It takes all of us to beat cancer.
Doctors, researchers, volunteers,
and most importantly, people like
you. Join the movement to beat
cancer at *StandUp2Cancer.org*

STAND
UP TO
CANCER®

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6 iPhone apps that use 3D Touch to make you more productive

The new iPhones let you hard-press app icons to unlock features that will boost your efficiency and productivity.

BY JAMES A. MARTIN

Tons of third-party iOS apps don't yet take advantage of Apple's 3D Touch, a key feature of the new iPhone 6s models, but thankfully additional apps get 3D Touch support every day. Here are six iOS apps that use 3D Touch to help you save a few seconds here and there and be more efficient.

3D TOUCH ON iPHONE 6s HELPS YOU GET STUFF DONE

Evernote (freemium; evernote.com) is the Big Daddy of note-taking apps, despite increasing competition from Microsoft OneNote (onenote.com). Using 3D Touch on the app icon, you can quickly create new notes, take photos, set reminders, or search for existing notes. As of this writing, Microsoft OneNote doesn't support 3D Touch.

Handle (free; handle.com) is a useful app that merges to-dos, Gmail, and calendar appointments. With a hard press on the app icon, you can create new to-dos, emails, or events. You can also preview email. Handle is a universal iPhone and iPad app, and it has an Apple Watch extension, but it's currently limited to Gmail.

Spark (free; readdle.com/products/spark) is a quality email app for iOS, though it's not optimized for the iPad as of this writing. With 3D Touch, you can

view your calendar, a list of recent email attachments, perform searches, and start a new email by hard-pressing the app icon. Within the app, 3D Touch lets you preview email, as well as choose to reply, forward, archive, or mark messages as read.

3D TOUCH HELPS YOU FIND YOUR WAY

The Weather Channel (free; go.macworld.com/weatherchannel) just received a major upgrade, with

15-day forecasts, flu and pollen reports, and the ability to remove in-app ads for $4 a year—yay! The app also got 3D Touch support. Force-touching the app icon lets you jump right to the app's radar feature, search locations, or check the weather for two different locations.

Citymapper (free; citymap-per.com), a GPS app that saved my sanity last year in London, makes particularly good use of 3D Touch. Pressing down on the app icon lets you quickly view nearby transit stops and begin navigation. Within the app, 3D Touch lets you view walking maps to transit stops.

OpenTable (free; go. macworld.com/opentable) uses 3D Touch to give you fast access to restaurants you have
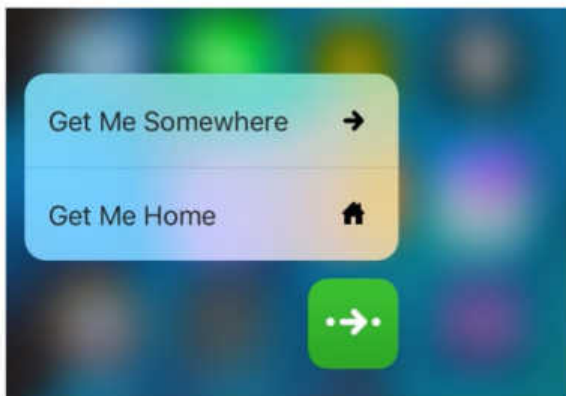
tagged as favorites, and it lets you view upcoming reservations. Within the OpenTable app, applying the 3D Touch to a restaurant name not only displays its location on a map, but also lists the restaurant's upcoming available reservation times. ∎

You might know **Joshua**. He loves video games, and he owns enough to know they're not all meant for kids. That's why he reminds his friends (at least the ones that have kids) that they all have big black letters on the box to help parents find the ones that are best for their families.

You can learn about those ratings at **ESRB.org**

Los Angeles, CA

ESRB
ENTERTAINMENT SOFTWARE
RATING BOARD

EARLY CHILDHOOD C | EVERYONE E | EVERYONE 10+ E | TEEN T | MATURE 17+ M | ADULTS ONLY 18+ A
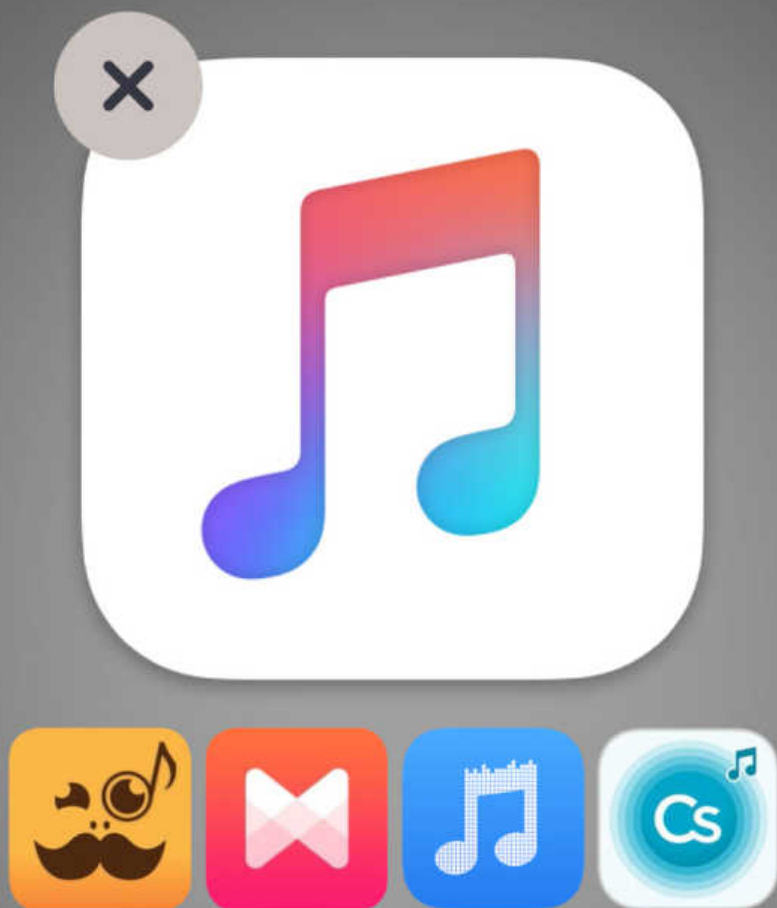
Alternatives to Apple's iOS Music app

Apple's Music app feels like overkill for simply playing your iPhone's music library. These apps do a better job.

BY KIRK McELHEARN

I f you like listening to music on your iPhone, iPad, or iPod touch, but don't use Apple Music, you may find the new Music app to be overkill. It's got lots of features that don't add much to your listening experience and just get in the way. With a cluttered interface, Apple's Music app has lost its main vocation: the ability to let you choose the music you want to listen to quickly and easily.

Fortunately, there are lots of alternatives. Most of these apps try to simplify the experience of spinning songs on your iOS device, or offer more intuitive ways of controlling your listening sessions.

While Apple doesn't let you easily replace its bundled apps—for example, even if you have another browser installed on an iOS device, Safari opens when you tap a link—there are no such limits with music player apps. They can all access the music you sync over iTunes, and the music you download to your device from iCloud or the iTunes Store. So any music player app can access your library, and you can control playback from your iOS device's lock screen, or even your Apple Watch.

Here's a look at four apps you can use to play music on your iOS device.

ECOUTE

The $1 Ecoute (pixiapps.com/ ecouteios) is a minimalist player that lets you browse your music library by viewing its artwork. It has the essen-

tial controls—play music in order, shuffle it, repeat it, and manage a play queue. But it also has some extras, such as a Shuffle Albums feature, which many people will find useful; I especially like this to listen to classical music.

Ecoute offers AirPlay streaming, and even lets you play podcasts. It

ECOUTE GETS OUT of the way so you can play your music without distraction.
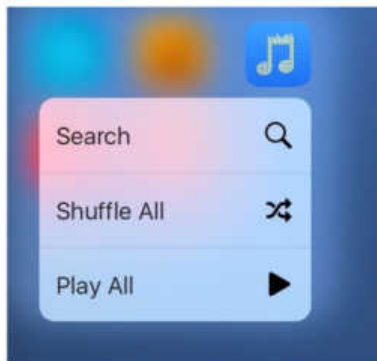
ECOUTE OFFERS 3D Touch options, making it easy to start playing music.

supports AirPlay, offers a night mode, and lets you sort music by many criteria.

And Ecoute is already updated to take advantage of 3D Touch, available on the iPhone 6s and 6s Plus (it's the only music player I've found that is, so far). When you hard-press its icon, you get shortcuts to Search your library, Shuffle All, or Play All your music. For the 3D Touch Shuffle All feature alone, this app has earned a place on my iPhone.

CESIUM

The $2 Cesium (cesium-app.com) is a minimalist music player, similar to what the iOS Music app used to be before Apple added all the extra menus and buttons. It's got a whole slew of tiny features that make playing music a lot better. You can

control it using gestures, you can choose a number of sort options (including "Classical Mode," which sorts classical music by composers' names instead of artists), and you can use it to play audiobooks.

With Cesium, you can shuffle by album, manage your play queue, view your listening history, and even choose custom colors for the app's theme, or use a night mode. I wish Cesium had better documentation and support, rather than just a page on Reddit and a Twitter account for the latter; figuring out how to use its gestures takes a while. But Cesium is a slick app, and once you've figured it out, it makes Apple's app look bloated.
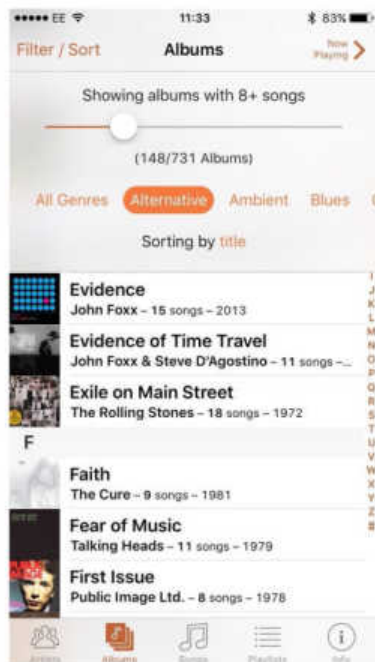
PICKY

If you have a lot of music on your iOS device—if you're carrying around a 128GB iPhone, for example—you may find it daunting to choose what to
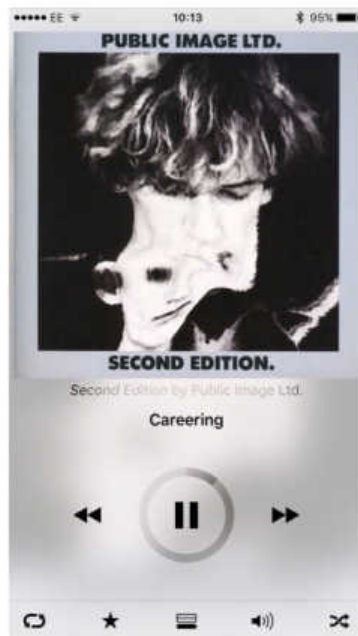
CESIUM'S SIMPLE INTERFACE handles the basics.

listen to. The $3 Picky (go.macworld. com/picky) steps in to let you filter your library to choose exactly the music you want to hear. Tap Filter, and, in the different views—Artists, Albums, Songs, or Playlists—you can choose to view only those entries with more than a certain number of tracks. For example, lets say that, for today's playlist, you want to only hear your rock, electronic, and alternative songs. Sort by those genres in Picky, and the rest of your music stays

PICKY LETS YOU filter your music, allowing you to play music from a selection of your library.

hidden.

This lets you choose when you want to listen to singles or occasional tracks that are outliers in your library. It can take a while to get used to this, but when you do, you realize how much easier it is to choose what to listen to if you have an eclectic music collection.

Aside from these filtering features, Picky is a clean, minimalist player, that offers the usual features: shuffle, repeat, a play queue, and more.

MUSIXMATCH

While it's not the most attractive music player out there, Musixmatch (which is free, but offers in-app purchases for some features; musixmatch.com) is great for those of you who like to sing along to your favorite songs. Musixmatch has a database of more than 7 million songs in 38 languages, and while it doesn't find lyrics for everything in my library, it does for most songs.
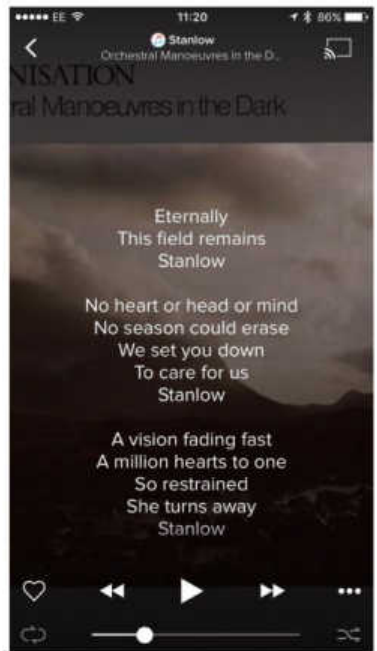
WHILE MUSIXMATCH IS also a player, its main feature is its ability to display lyrics for millions of songs.

You can also use Musixmatch to identify songs you hear around you, and display their lyrics. Musixmatch has an Apple Watch app, which can control the iPhone app, display lyrics, and listen to music to identify songs. There's also a Notification Center widget, if you'd like to see lyrics on your iOS device's lock screen.

There are plenty of other music player apps available for iOS, but these four offer a streamlined approach to choosing and playing music, as compared to Apple's stock Music app. If you listen to music on your iOS device a lot, try one of them out. ■

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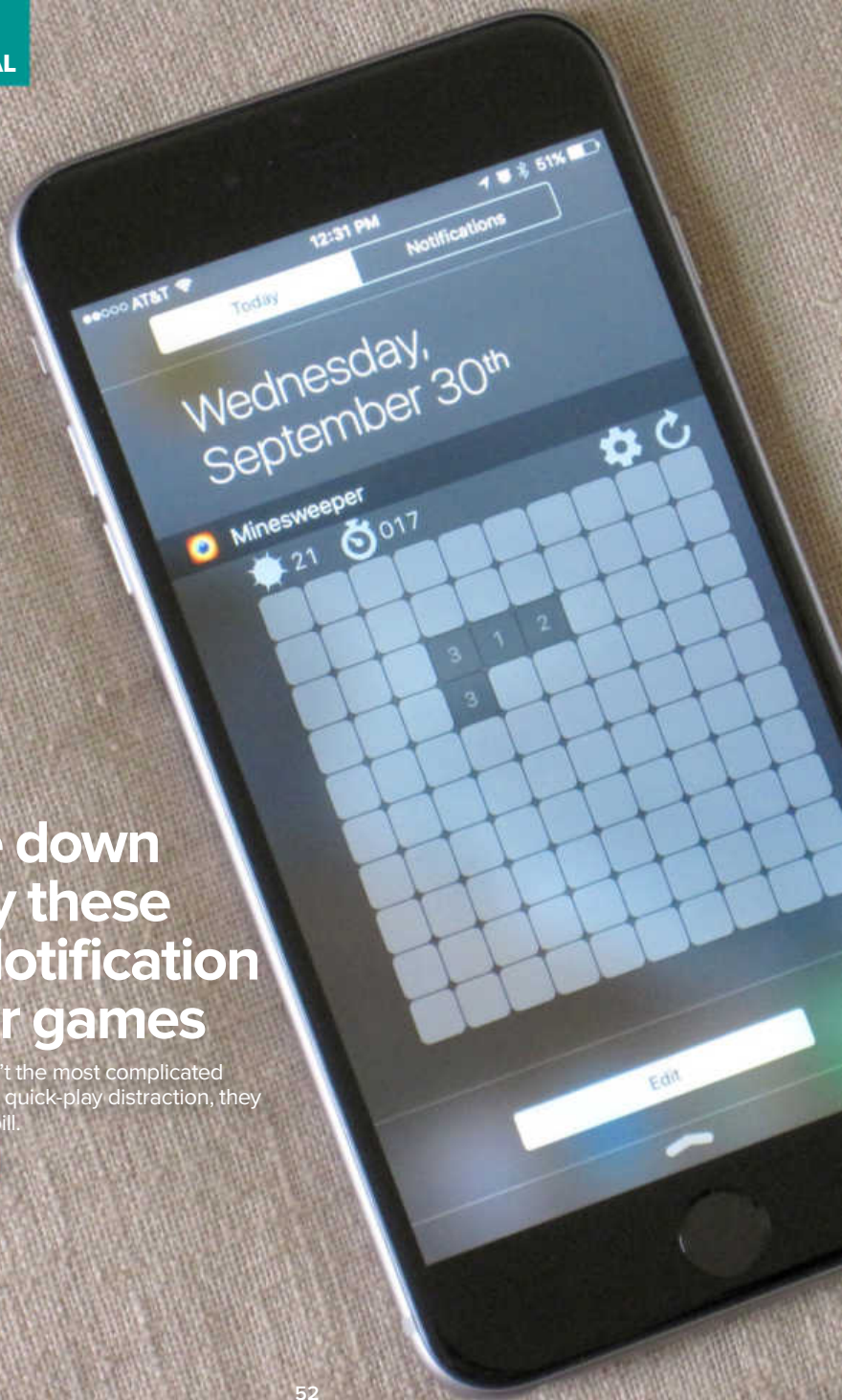
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Nick Jonas,
Think It Up Ambassador

Swipe down to play these four Notification Center games

True, these aren't the most complicated games, but for a quick-play distraction, they may just fit the bill.

BY DEREK WALTER

Forget news, weather, and sports: It's time to add a game to your list of sensible Notification Center apps. A few quick-play titles can live on your iPhone as widgets (go. macworld.com/ncwidgets, if you're running iOS 8 or 9), ready to help when you need to recalibrate your brain.

Though these games are pretty simple—you won't find any hard-core mobile first-person shooters or resource-management games here— we've rounded up four solid choices that put you just one swipe away from enjoying a mental break or challenge.

Whether you're maniacally tapping your screen to beat this Flappy Bird clone or calculating your next move with the classic Minesweeper, these quick-task games are the perfect pill to swallow when you just want a short play session.

MINESWEEPER

A good place to start is with the classic Minesweeper ($1). To play, you must carefully select the right square on a grid without detonating one of the mines. The numbers on the squares indicate how many neighboring explosives are waiting to blow off your finger (figuratively speaking, of course). The game ends when you've hit an unlucky square.

You have a few customization options, like the ability to change up the
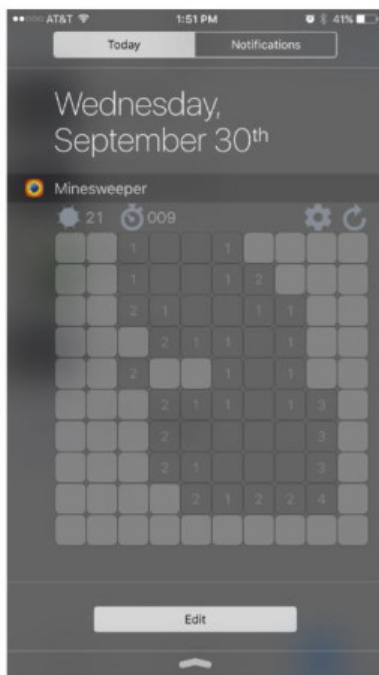
IF YOU LOVE the classic Minesweeper, this is a great widget to have.

number of squares on the grid or add or subtract how many mines await you. It's an ideal use for a widget game, as it can be played and put aside without a time constraint, and then you can start again where you left off.
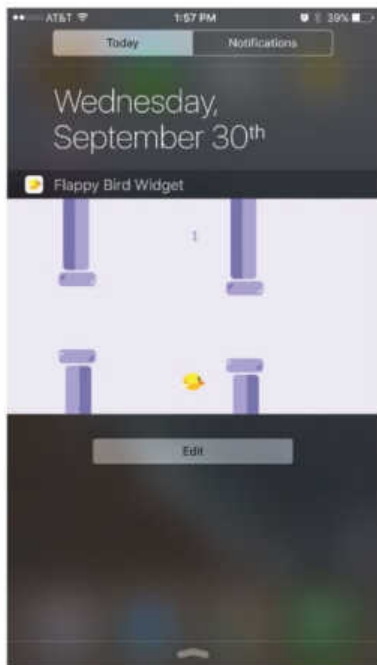
TAPPY BIRD WIDGET puts a super-frustrating game one swipe away.

TAPPY BIRD

You probably have experienced the fist-pounding fury of Flappy Bird (though there are better options if you want a one-handed game, go. macworld.com/onehandedgame).

If you want quick access to such frustration, then check out Tappy Bird (go.macworld.com/tappybird, free). It's essentially a Flappy Bird clone in widget form (the widget even reads *Flappy Bird Widget* when it launches inside the Notification Center.)

The game is pretty tough—in fact, the compressed size requires it to fit into the widget space, which makes it even more challenging than the full-sized game. There's not much else to it, but it still lures you into play because it's nearly impossible to win—yet you'll want to keep trying.

2048 WIDGET

There are a lot of versions of the game 2048 floating around in the App Store—which are all clones of one of our favorite mobile games,
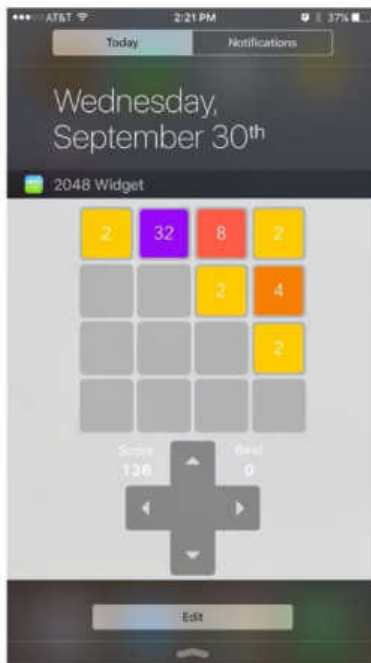
THE 2048 WIDGET is a good brain challenge when you have a few moments free.
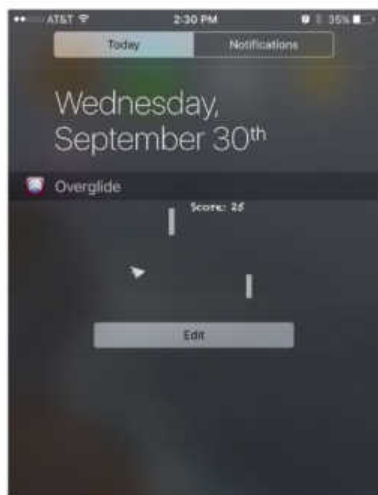
GUIDE YOUR PAPER airplane safely on its journey with Overglide.

Threes (go.macworld.com/threes). While we wholeheartedly recommend Threes over any version of 2048, 2048 Widget (go.macworld.com/2048, free) comes in handy if you want simplified gameplay in a pinch. With this version, you use the controller pad to move around the tiles. If you've never played this style of game before, your goal is to clear the board by combining number pairs to double their value—in our screenshot, for example, you'll combine two 2's to make one 4, then fold two 4's together to make one 8, and so on.

You can change up the background color, making it white, black, or clear, and instruct the game to auto reset whenever you swipe away the widget or move on to something else. The game also keeps track of your top score, so you can challenge yourself to improve each time.

OVERGLIDE

If you're looking for something slightly less frustrating than Tappy Bird, then give Overglide (go.macworld.com/overglide, $1) a try. It's the same concept—you must safely navigate a paper airplane through an obstacle course.

Instead of tapping furiously, you hold your finger on the screen to gain altitude and lift it up to lower the plane. This is much less difficult than the tap-centric craziness of the feathered alternative. It's not easy though—the game space is rather small, which can make the game fail to register when your finger is on the screen.

True, with the speed of Touch ID, launching a "real" game is hardly a hassle, so for many of you these widget games won't even be worth it. However, for moments when you're waiting in the checkout line or need to kill time for a hot second, these no-frills games may just be the perfect distraction. ■

INSTAPAPER 7: EXCELLENT READ-LATER APP ONLY GETS BETTER ON iOS 9

BY J.R. BOOKWALTER

THERE WAS A TIME not so long ago when reading web-based content required patience while sifting through pop-ups, inline ads, and poorly formatted HTML. While things have improved in recent years—especially with iOS 9's adoption of content blockers—nothing beats cozying up with a good "read later" app that makes everything look neat, clean, and most importantly, ad-free.

When I think of *read later,* Instapaper (instapaper.com) is the first app that springs to mind. That's not just because it was one of the first such services to save web content from browsers back in early 2008, but also

INSTAPAPER 7
◆◆◆◆½

PRICE

Free (Premium and subscription options also available)

COMPANY

Instapaper

because it continues to offer the best experience without the unnecessary bells and whistles of its rivals.

CLUTTER-FREE READING

Instapaper 7.1 doesn't deviate much from the established playbook, but rather refines what already makes it a favorite. For starters, Apple's new iOS 9 San Francisco font is now an option alongside 14 other typefaces, assuming you're not already sick of seeing it all over your devices. It's a very clean, easy-to-read font (especially on the iPhone), although it seems a tad small compared to my previous favorite font, Lyon. (This was easily remedied by kicking the size up a notch.)

Another visual flourish is the addition of image thumbnails in article rows, which provides welcome context from the typical rows of text found in previous versions. If you prefer to see a snippet of each article, image thumbnails can be toggled off in Settings for a more traditional appearance.

A subtler enhancement is how the navigation menu now slides over the article rows instead of appearing from underneath them. While Instapaper's navigation menu was never slow, this method feels faster in daily use, and can be called up from Home view by tapping the icon in the upper left corner or swiping from the left edge of the display.

For English-language articles, Instapaper's text-to-speech
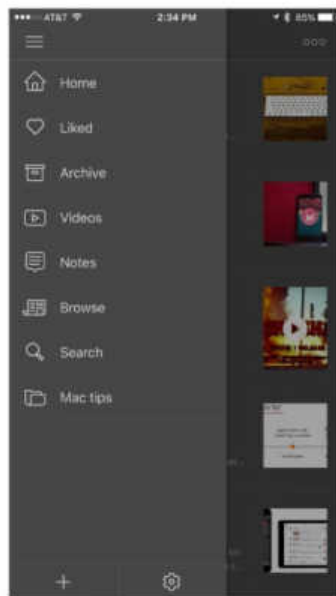
INSTAPAPER 7 PACKS in a variety of subtle improvements, such as a navigation menu that slides over the article list, rather than underneath it.
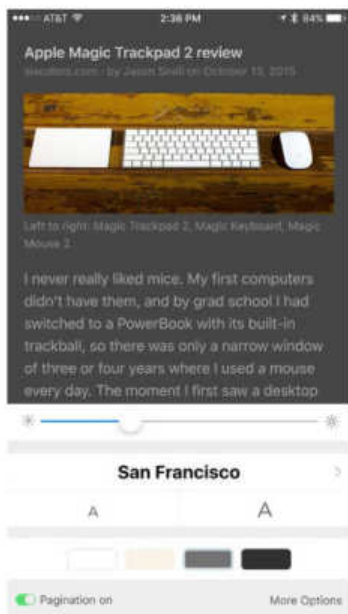
IF YOU LOVE Apple's new San Francisco font in iOS 9, you can now use it everywhere in Instapaper 7.
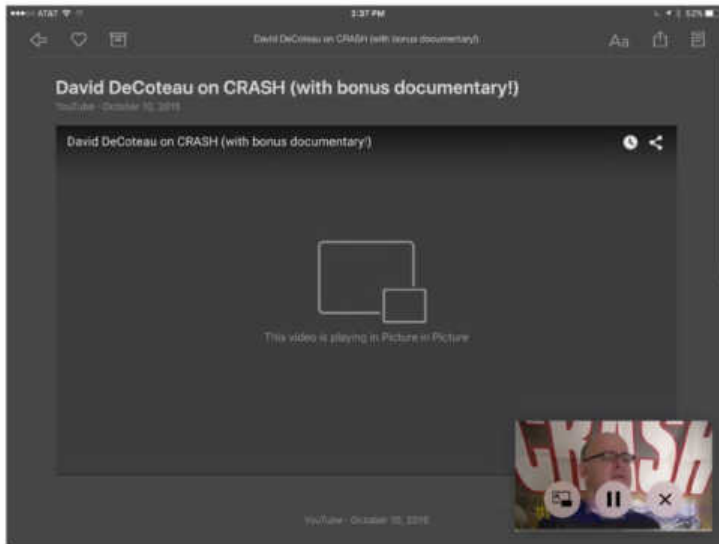
YOUTUBE AND VIMEO videos saved to Instapaper 7 can also be displayed picture-in-picture, but you won't be able to browse other articles while doing so.

capabilities will now automatically use the higher-quality and more natural-sounding Alex voice for spoken American-English. You'll have to first install this voice from iOS Settings → General → Accessibility → VoiceOver → Speech → Add New Language, which requires an 869MB download. (A bug in version 7.0 that prevents Alex from playing has been fixed in 7.1.)

HELLO, PRO

Although the new iPad Pro isn't available at the time this review was written, Instapaper 7.1 already includes support for Cupertino's big-screen tablet. The previous 7.0 update introduced multitasking support, allowing Instapaper to run alongside other compatible apps when using an iPad Air 2 or higher.

To better facilitate multitasking, Instapaper slightly tweaks the appearance of grid and row cells on the
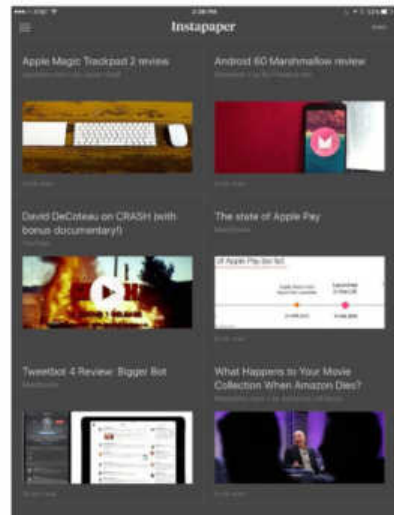
ON THE iPAD, Instapaper can now display image thumbnails in grid view—but only at the expense of a text preview.

iPad. One downside of this change is you'll have to choose between a grid of either text previews or image thumbnails—you can only view both while in list view.

While Instapaper may primarily be known as a read-later app, it can also be used for saving video content for viewing at a more convenient time. iPad owners can now take full advantage of this functionality with picture-in-picture (PiP) support for YouTube and Vimeo videos, although this only works best when jumping over to other apps—as soon as you attempt to browse another Instapaper article, the PiP window closes as well.

Last but not least, Instapaper 7.1 also delivers support for 3D Touch, which can be used to preview links inside articles, or up to four Quick Action shortcuts from the home screen. Any of the navigation menu buttons can be configured from the app settings, which also includes very handy new Last Saved and Random options.

INSTAPAPER 7.1 ALSO introduces support for iOS 9's 3D Touch feature, with configurable Quick Action shortcuts from the home screen.

BOTTOM LINE

On the surface, Instapaper 7.1 may seem to offer only a few subtle improvements, but these changes collectively add up to an impressive update that takes full advantage of everything iOS 9 has to offer. ■
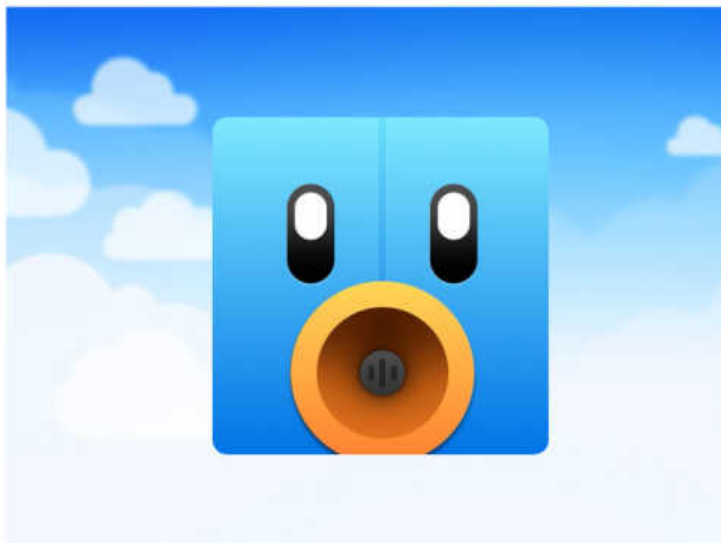
TWEETBOT 4 FOR iOS: TWITTER CLIENT ADDS SPLIT-VIEW, ACTIVITY MONITOR, OTHER IMPROVEMENTS

BY GLENN FLEISHMAN

YOU'LL FIND FEWER ENMITIES so fierce and opinions as strong as which Twitter client is the best—at least among Twitter enthusiasts and obsessives, who may resemble this reviewer. Tweetbot has been my client of choice for years, for both iOS and OS X, and despite dabbling with other software options—including Twitter's own releases—I've stuck with the Tapbots products.

Tweetbot 4 for iOS (tapbots.com/tweetbot/, $10) is now out, and shows why my trust is well placed: The product continues to mature and deepen, incorporating a lot of small, welcome changes and building in new features made available by Twitter, as well as adding some large ones. Notably, a new statistics and activity view gives you quick and easy insight into how people are reacting to what you tweet.

TWEETBOT 4

♦♦♦♦ ½

AT A GLANCE

Tweetbot 4 introduces a new statistics and activity view that gives you quick and easy insight into how people are reacting to what you tweet, solidifying Tweetbot's status as one of the best Twitter clients.

PROS

- Design allows crisp, category-separate viewing of tweets
- Advanced mute feature is even better, with more options
- Split-screen iPad/iPhone Plus in-app view makes good use of screen territory
- Stats view shows interactions at a glance

CONS

- Can't fave tweets in a thread with a single tap
- Could be better at allowing threaded replies

PRICE

$10; special $5 "bundle" price for Tweetbot 3 owners

COMPANY

Tapbots

The biggest improvement you'll see on iPhone screens is landscape support, while the iPad and iPhone 6 Plus and 6s Plus receive a new column view, allowing side-by-side displays within the app. The image picker is enormously faster and better as well.

WHY PICK A THIRD-PARTY CLIENT AT ALL?

The biggest question for any Twitter client is: Why not just choose the free software provided by Twitter or use its mobile-optimized website? On the former score, Twitter's software immediately adds any new features the social network deploys, letting third parties wait for an official developer release. But it's kind of a mess.

The interface is outdated and, to my eye, aesthetically unpleasing. The organization of messages and tabs is tied to what Twitter finds important as a business—an advertising business—more than what you might want to focus on as a reader or poster. And it makes bad use of screen territory, with no landscape mode for the iPhone and a poor one for the iPad. Its only advantage currently? It allows multiperson direct messages (DMs), a feature it hasn't rolled out to third-party apps yet.

Tweetbot better reflects how I use Twitter, keeping categories and other kinds of things separate. Most critically, it incorporates a sophisticated set of mute options, which can be used effectively to avoid unfollowing or blocking people or groups during periods of time (or even forever) that you don't want to have their tweets in your timeline. At $10 ($5 during an introductory period) I have a hard time arguing against its value, especially for those who post from more than one Twitter account.

THE INS AND OUTS OF THE BOT

When launching Tweetbot for the first time, you'll find that it has already picked up the Twitter accounts you've already entered in iOS. You can
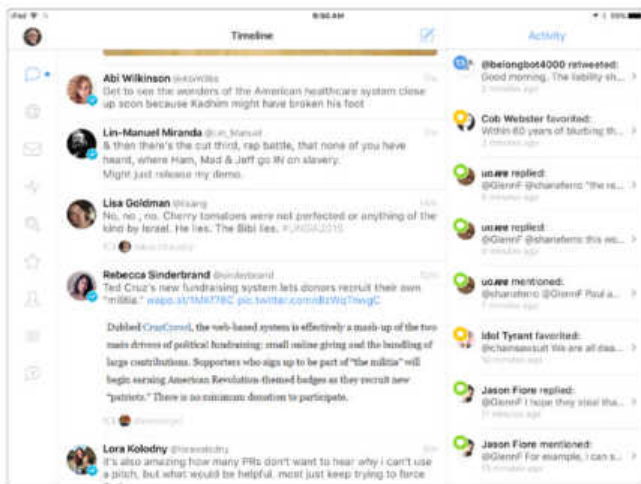
THE DRAFTS FEATURE retains thoughts for later retrieval.

also add other accounts manually within the program. For those who manage multiple accounts for fun, work, or profit, Tweetbot has easy ways to swap among them.

I have one favorite minor feature: When you tap your account's avatar and it drops down the avis for other accounts, you can tap, hold down, and rearrange the order in which accounts appears in that list. Swiping left across the top lets you cycle through accounts, and you can also tap the avatar in a new message to choose a different account from which to post.

Each account can have separate settings for uploading images, videos, marking the last-read tweet, read-later saving, and URL shortening. Some of these default to Twitter's options, but Tweetbot supports major alternate services.

The iPhone and iPad versions take different advantage of the territory. On the iPhone, icons along the bottom allow access to your timeline, mentions (those @ replies), direct messages, and two user-selectable options from six remaining choices: Search/trending, faves, lists, mute, profile, and activity/stats. The iPad versions shows all nine options along the left-hand side.

A NEW STATS tab helps inform you about interactions on your tweet—and maybe feeds your ego.

Tweetbot also stores drafts. When composing a message, you can tap Close, and you're prompted to either save as a draft or delete it all together. While the OS X version has a separate Drafts window, I've always thought it clever that Tweetbot for iOS puts a Drafts button in the new message dialog. Tap it, and you can select from outstanding drafts or delete them. Location support allows dropping in precise coordinates or choosing from a list of suggested nearby named places.

The robust threading support in Tweetbot lets you follow often lengthy discussions, and dive deep to see offshoots. Swipe left on any tweet, and messages that precede and follow it—using Twitter's thread-

ing data—are shown above and below.

Tweetbot 4 for iOS reverses the chronology of its previous threading behavior, however. In this version, the current tweet is shown at the top of the screen, and newer replies below. However, if there are preceding tweets, swiping down reveals those. This change was introduced during beta testing, and I found it horrible at first—and then gradually got used to it. It makes more logical sense, and I adjusted.
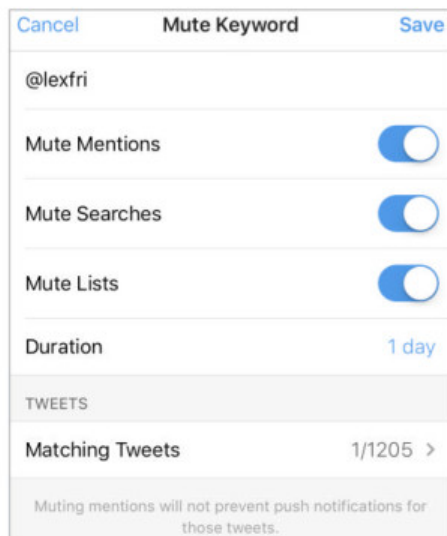
The one flaw Tweetbot has related to threading occurs when you reply to your own tweet. If you want to have a sequence of multiple messages that link one to the other, you must reply to the previous one in the chain for Twitter to record the order properly. Some third-party clients highlight your @handle in such a reply so you can start tapping and erase it as a default choice. Tweetbot does not, though it does remove your handle in threading replies to others.

Cancel	Mute Keyword	Save
@lexfri		
Mute Mentions		⬤
Mute Searches		⬤
Mute Lists		⬤
Duration		1 day
TWEETS		
Matching Tweets		1/1205 >

Muting mentions will not prevent push notifications for those tweets.

TWEETBOT LETS YOU have refined mute to prevent over-talkative friends or busy tags take a timeout. (Lex, you know I'm just kidding.)

THE NEW AND IMPROVED

I'll admit I have a bit of interest in knowing which of my tweets people seem to care about, and the Stats panel feeds my pitiful ego. It shows an interaction summary at the top: Faves received, number of retweets, and a count of new followers. Below, it lists all of your tweets that someone has interacted with, showing in separately color-coded favorite and retweet/quote bars the quantity. Tap the Activity tab at the top, and you can see each interaction, one at a time.

On an iPhone 6 Plus, 6s Plus, or an iPad, you'll get an extra column that lets you monitor activity, shows stats, and lets you see mentions, follow a list, or match stored searches—just rotate your device to land-scape mode. This is a neat echo of the new split-screen and slide-over views available on some iOS devices, but entirely within the app.

There's a load of other updates, too. Tweetbot takes advantage of Apple's new Safari View Controller to load webpages. This uses a full-fledged version of Safari within the app, including honoring content-

blocking extensions. It's more robust and faster than the only previous alternative offered to iOS developers.
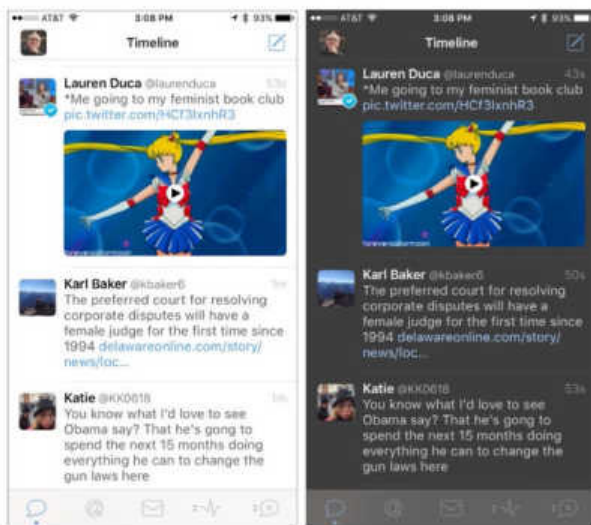
I find the mute controls in Tweetbot invaluable, especially because they sync across iOS and OS X. Unfollow and block are coarse controls, especially when you just want silence from a given person for a short period of time—or you're trying to block all mentions of a particular sportsball game. (I wouldn't know anything about people needing to mute a loudmouth—no, not at all, no, sir.)

As before, you can mute by handle, keyword, hashtag, or Twitter client, and for a period of one day, one week, one month, or forever. These tweets are silently removed from Tweetbot. The new versions lets you add users and hashtags directly from the Mute view—before, you had to find an example and use a mute control to add it. Mute for everything but clients now offers pulling matches out of not just your timeline and mentions, but also in search results and lists.

> ## I FIND THE MUTE CONTROLS IN TWEETBOT INVALUABLE, ESPECIALLY BECAUSE THEY SYNC ACROSS iOS AND OS X.

IT'S LIKE DAY and night, the difference between these light and dark modes.

Attaching images is substantially better in this release than in previous ones. With iCloud Photo Library, I have tens of thousands of images loaded in "optimized" form on my iPhone. Tapping to add an image from the library took seconds on an iPhone 6 for the selector to appear. Now a side-scrolling list of thumbnails appears nearly instantly for the most recent images, and you can tap to examine the library more fully or take a picture.

Though it may seem minor, being able to view Tweetbot on any iOS device in both portrait and landscape modes is a nice change, especially with the new Safari controller support, which makes it more likely I'm

reading webpages inside Tweetbot instead of leaving for Safari.

Finally, if you're a tweet-somniac, a simpler way to access night mode swaps white for a chocolatey dark brown with a two-finger swipe up; take two fingers and swipe down to reverse back to daytime.

THE FUTURE OF TWEETBOT

Twitter has been pushing back against third-party clients for years, which must be nerve wracking for any developer putting time into a client. And Tweetbot doesn't include Twitter's ads, although it may be required to at some point.

However, outside developers and individual users built, named, or inspired much of what we think of as Twitter. Tapbots' continued work hasn't stalled. They're hampered only by what Twitter exposes to them, and lets them incor-

AN IMPROVED IMAGE selector comes up quickly and shows thumbnails.

porate. Let's hope that continues, and this excellent option outside the social network's more modest user software continues to thrive.

Because Apple doesn't offer trials in the App Store, there's no way to test out Tweetbot without purchasing it. However, owners of previous releases can buy version 4 at a quasi-upgrade price during the current introductory promotion. Or, after the price is set to $10, Tapbots says it will release a "bundle" for Tweetbot 3 owners that includes Tweetbot 4. The "complete this bundle" price will be $5. ∎

SONOS PLAY:5 (2015 EDITION): IT'S DIFFICULT TO IMAGINE A BETTER-SOUNDING NETWORKED SPEAKER AT THIS PRICE

BY MICHAEL BROWN

SONOS'S BUSINESS MODEL differs from most consumer-electronics companies: It doesn't rely on planned obsolescence for ongoing revenue. Sonos doesn't want you to replace the product you bought from them two or three years ago; it wants you to expand your system with new components, to bring music to new rooms in your home. "You liked the speaker you bought for the living room," the company seems to say,

SONOS PLAY: 5

🔵🔵🔵½

AT A GLANCE

Sonos knocks one out of the park with the all-new Play:5. This is a spectacular speaker either on its own or as part of a whole-home audio system.

PROS

• Wonderfully musical to listen to

• Sonos's mesh network makes for outstanding whole-home audio

• Terrific price/performance ratio

CONS

• Not as high fidelity as the more expensive B&W Zeppelin Wireless

• No threaded mount

PRICE

$499

COMPANY

Sonos.com

"how about adding a smaller one for the bedroom? Hey, now you can connect a Sonos soundbar to your TV. Need more bass response? Our new subwoofer is just the ticket. Why yes, we do have speakers you can use as surround channels in your home theater." And so on.

So that makes the new Play:5 (sonos.com/shop/play5) powered speaker something of a departure for Sonos. This is the first time the dominant player in the multiroom audio market has re-engineered and replaced an existing product. The phased-out Play:5, introduced as the ZonePlayer S5 in late 2009 and was Sonos's first powered speaker. Prior to that, you needed a Connect:Amp and passive speakers, or a passive Connect and powered speakers (those products also went by different names in the early days).

JUST ONE SIGN of the attention to detail paid during the design of this speaker: The Sonos label is perforated so as to not block the tweeter that it dips in front of.

Sonos is also strong when it comes to making its existing products easier to use, better, and less expensive. It developed a smartphone app so you didn't have to buy its elegant-but-expensive controller. It eliminated the need to have at least one of its components hardwired to your router (or buy a wireless bridge if that wasn't possible). And it came up with a signal booster for larger homes or situations where Sonos nodes were too far from each other. In that vein, Sonos's Trueplay calibration software is a major step forward that I'll cover in more depth in a separate story.

The ZonePlayer S5 was a strong speaker, but the new Play:5 makes it seem downright primitive. The cabinet houses three long-throw mid-woofers and three tweeters (two of which fire to the side to give the speaker a wide sound stage). Each of the six speakers is driven by a dedicated Class D amplifier. Following its long practice, Sonos doesn't disclose power ratings for its amps; but trust me, you don't need to worry that this speaker isn't loud enough. It filled my 323-square-foot great room with sound, and it nearly drove me out of my slightly smaller (247 square feet) home theater.

As with the rest of the Sonos line, the new Play:5 has an 10/100Mbps Ethernet port in back, but most people will take advantage of Sonos's

excellent mesh network and run the speaker wirelessly (which is how I tested it). Alternatively, you can plug in an analog audio source into the 1/8-inch input next to its RJ-45 port.

For a single-cabinet speaker, the Play:5 does a very good job of presenting a stereo image, but Bowers & Wilkins' Zeppelin Wireless (go.macworld.com/zeppelin-wireless)—which puts its tweeters at the outer edges of its football-shaped enclosure does it better. I also think the Zeppelin delivers just slighter higher definition than the Play:5; then again, B&W's speaker costs $200 more and Sonos's networking technology is superior to Apple's AirPlay when it comes to building out a whole-home audio system.

A single Play:5 performs best when its oriented horizontally, but rubber feet at either end allow it to be set vertically. In this position, an accelerometer switches the speaker to monophonic mode. Pairing it with a second Play:5 produces two-channel stereo again. You can use multiple Pair:5's with a Sonos Playbar and a Sonos sub for a home-theater setup (a scenario I did not evaluate).

Listening to what I think is one of the best live rock recordings ever—the Talking Heads' *Stop Making Sense*—I felt Chris Frantz's kick drum and Tina Weymouth's bass line (from "Life During Wartime") deep in my chest as much as I heard it with my ears. Those long-throw woofers really move a lot of air.

The Play:5 is equally adept with other types of music. Playing Bill Evans' "B Minor Waltz (For Ellaine), from the jazz pianist's album *You Must Believe in Spring,* I was immediately impressed with the manner in which the tweeters articulately rendered Evans' piano without ever losing the ability to deliver Eddie Gomez's delicious double bass lines. You could hear each attack as the piano's hammers hit its strings. It was a truly blissful experience.

If you're looking for a single networked speaker and can afford to spend $200 more, B&W's Zeppelin Wireless is the product to beat. But if you're planning to build out a network of speakers in your home, or even if your budget won't stretch to $699, the $499 Play:5 is the speaker you're looking for. ■

STAND THE PLAY:5 upright and an accelerometer switches it to monophonic mode, so you can create a true stereo pair with two.

What's new at the App Store

SEEDLING COMIC STUDIO

Seedling Comic Studio (seedling. com/pages/comic) allows you to create your own comic book using a mix of your own pictures with the app's custom background and stickers. It comes with three different storytelling "themes" for free, with more available for in-app purchases of $1 each.

Drafts

The $10 Drafts 4 (agiletortoise.com/ drafts) is one of the more powerful text-composing apps in iOS-land. The latest update includes an Apple Watch complication—tapping on it launches the app in "dictation capture" mode for a new draft—as well as new keyboard command key types to toggle between the drafts and actions lists.

Kitchen Stories

Kitchen Stories (eng.kitchenstories.de) is a free video cookbook, full of step-by-step instructions for tasty meals that can be prepared in 20 minutes or less. The app received an update this week with support for the iPad's picture-in-picture mode and multitasking, found in iOS 9, plus an overhauled user interface that makes it easier for you to create and share your own recipes.

Wotsopen

Wotsopen (wotsopen.com) is a free iOS app that lets you know, natch, what's open: It "pulls in all available opening times of places around you and sorts them into 5 quick access categories: Eat, Drink, Shop, Get Cash, and Things," the latter category of which includes fun places to go like movie theaters, museums, and more.

Vizo

The developers say "Just five minutes a day with Vizo (go.macworld.com/vizo) is all you need to stay on top of the world." The app takes stories from publications like The New York Times, The Wall Street Journal, The Telegraph, and The Guardian, and condenses them into 400-to-600-word summaries. Want to know more about a story? Click the link and go to the full source.—JOEL MATHIS

Backpacks when you need to carry more than just your iPad

This month's roundup features some slim backpacks, a Targus cover with keyboard, and a rugged leather sleeve to protect your iPad.

BY MARCO TABINI & EMANUELA CORSO

MAKR

The Attache (all iPad models; $240; makr.com) sports a simple envelope-style layout, secured with a tab closure for worry-free carrying. Sewn and painted by hand, this leather sleeve features burnished edges, includes plenty of room for your iPad, your iPhone, and your keys, and comes in black or ox blood.

MOSHI

The Venturo (all iPad models; $120 to $150; moshi.com) offers convenient protection for all of your electronics. The backpack features a cushioned interior with different compartments for your iPad, iPhone, and laptop, comes with a cross-body shoulder strap, and is available in four color combinations and two different materials.

TARGUS

The VersaType with Power Bank (iPad Air and Air 2; $140; targus.com) incorporates a convenient full QWERTY keyboard with backlit keys for all your typing needs. Tested to withstand drops from up to four feet, the folio case doubles as a stand in landscape orientation with support for multiple angles, is compatible with the iPad Air's magnetic on/off feature, and comes with an auxiliary battery that powers the keyboard and can be used to charge your phone.

BOOQ

The Mamba Courier (all iPad models; $125; booqbags.com) provides a one-stop storage solution for all of your electronics, with a main zippered compartment for your MacBook (up to 13-inches) and dedicated pockets for your iPad and iPhone. Manufactured with lightweight natural fabric, this shoulder bag features a folding flap secured by metal hooks, nylon fabric lining to keep your devices from getting scratched up, and a waterproof coating to keep your belongings dry.

iPad bags

WATERFIELD DESIGNS

The stylish and functional Outback Solo (iPad Air 2, iPad Pro; $89 to $108; sfbags.com) sports a generous pocket for your brand new iPad Pro and Smart Keyboard, an iPhone, and all your other accessories. Made with waxed canvas, leather and neoprene, the rugged bag includes a magnetic closure for extra peace of mind when you're on the go, and comes with an optional shoulder strap for hands-free carrying.

KNOMO

The Beaux (all iPad models; $350; knomobags.com) is a leather backpack with a spacious shock-proof compartment for your iPad and numerous internal pockets for additional storage. Equipped with an ergonomic back panel for comfort, the backpack features adjustable shoulder straps and an external zippered pocket for your iPhone and headphones. It comes in espresso, black, or navy.

NOVELS ROCK 'N' ROLL STAND-UP COMEDY JAZZ VIDEO GAMES MOVIES COMIC BOOKS TALK RADIO

EVERY NEW ART FORM HAS ITS FIGHT FOR FREE SPEECH.

OUR TIME IS NOW
FIGHT FOR YOUR VIDEO GAMES

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APPLE TV: BIG STEPS FORWARD, BUT NOT A REVOLUTION

It's a lot more capable than the last-generation Apple TV, but this new version still has plenty of room for improvement. **BY SUSIE OCHS**

A pple finally updated its Apple TV set-top box, which had remained virtually unchanged for years, since going 1080p in 2012. The new version is faster, easier to use, and less frustrating, at least most of the time. What it isn't is a revolution—everything Apple added already existed in its competitors.

An App Store and a microphone-equipped remote for voice search are both excellent features to have, and they bring the Apple TV closer to the Amazon Fire TV and Roku. But Apple still has a ways to go. The Remote app for iOS doesn't work with this new model, for example, so we're back to entering passwords one letter at a time by clicking with the remote—that's actually a step backward from where we were. You still can't enter your cable-provider credentials in one place and see a list of all the network apps you could log into. Without categories in the App Store, you can't even find a list of all the games.

Perhaps the real revolution will come when Apple is ready to unveil its long-rumored streaming service, or even an actual television set. What we have today is a nice set-top box with some early bugs but a whole lot of potential.

THE SIRI REMOTE IS EXCELLENT

The new Apple TV doesn't appear much different than the old one. I wish it still had an optical audio-out jack like its predecessor did. I used that to send audio to my circa–2001 AV receiver, which doesn't have HDMI ports, so I could AirPlay music from a Mac or iOS device to my stereo without having the TV on. Many modern receivers do have HDMI, and other workarounds exist, so this might not bother you so much (go.macworld.com/appletvaudio-ports).

I'm glad it still has Ethernet—last year I had some issues getting the Wi-Fi–only Roku Streaming Stick (go.macworld.com/rokustick) to connect to my home network, and having an Ethernet jack is a nice fallback. The back of the device also has a USB-C port, which is there for service and diagnostic reasons, not for connecting a hard drive full of content.

That leaves the Siri Remote as the most noticeable hardware change. The new remote has a touchscreen taking up the top third—it feels smoother under your thumb than the glossy surface on the bottom third, which helps when I mistakenly pick the remote up upside-down. The Menu button goes back, and there's a new Home button that automatically takes you to the home screen. The microphone button is what you'll hold down to enable Siri search, to query multiple channels at once (more on that later). Play/Pause is self-explanatory, and the plus and minus buttons control your TV's volume, thanks to HDMI-CEC (Consumer Electronics Control) and IR blasters.

If your TV supports CEC (go.macworld.com/cecsupport), you probably won't even have to set it up. Assuming the feature is enabled in your TV's own settings, the Siri Remote will detect it. Then you'll be able to use the remote to turn your TV on and off by holding the home button down and selecting Sleep to turn it off, or pressing the home button once to turn it back on and switch to the Apple TV's input. The volume

APPLE TV (2015)

♦♦♦♦

AT A GLANCE

It's a lot more capable than the last-generation Apple TV, but this new version still has plenty of room for improvement.

PROS

- Siri Remote controls your TV's power and volume and enables voice search.
- Open App Store.

CONS

- Poor App Store discovery, with no browser-based or mobile versions.
- Doesn't support iOS Remote app or keyboards for entering passwords.

PRICE WHEN RATED

$149 (32GB); $199 (64GB)

COMPANY

Apple.com

buttons should work too. If none of that works because your TV doesn't have CEC, you can still go to Settings ➔ Remotes And Devices ➔ Volume Control, select Learn New Device, and follow the prompts. Since I use the Apple TV almost exclusively, this has really cut down on how much I use the TV's own 46-button remote control.

USB-C

Built-in power supply   HDMI   10/100 Ethernet

PERFORMANCE IS MUCH IMPROVED

My third-gen Apple TV was the most sluggish Apple product I still used every single day. I had trouble with it all the time. Often it would refuse to connect to my network even when everything else in the house did just fine. "iTunes is currently unavailable" was a frequently seen error message, preventing me from streaming

content in my collection. (Last week iTunes let me buy a season pass right on the Apple TV, but then immediately claimed to be unavailable when I asked to watch it. That was frustrating to say the least.) Fortunately, the new Apple TV performs much better. I haven't had problems with network connectivity or iTunes outages since hooking it up.

That isn't to say it's free of bugs. For example, when you're watching a

SEARCHING FOR *NEW GIRL* shows results in iTunes, Netflix, and Hulu.

Moonrise Kingdom

★★★★★ 2012 PG-13 1h 33m

Their parents think they're lost, but they've found each other -- and their own private, wonderful world.

Because you watched Portlandia

COMEDY BANG! BANG!

NETFLIX ANTHONY JESELNIK THOUGHTS~PRAYERS

IRIS

NETFLIX WET AMERICA FIRST DA

Animation

Curious George BOOFEST

CARS TOON

Masha & Bear

LEGO CITY

NETFLIX

show or movie, you can swipe down on the trackpad for more options, like choosing an AirPlay speaker or turning on subtitles. When Hulu auto-advances from one episode to another, often the "Swipe down for more" message gets stuck on the top of my screen, and I have to quit and then restart playback to get it to go away.

Navigation with the Siri Remote is fast and fluid thanks to the trackpad along the top, but the real hero is the more flexible layouts that require less drilling down into menu after menu to find something to watch. In Netflix on my old Apple TV, once I chose a

profile (mine or my son's), the first screen of options held zero things for me to actually watch; instead I had to choose from a text-only menu with items like Suggestions For You and Recently Watched, each bringing me to a separate screen of shows and movies. The Netflix app on the new Apple TV is laid out more like the iPad app: Once I'm signed in, the next page includes side-scrolling lists of shows and movies, under those headings plus more, like Popular On Netflix, and Watch Again.

Searching with Siri is a big improvement too, although it's got a learning curve. Siri can't understand

THE INTERFACES for apps like Netflix, Hulu, and HBO Go are a lot easier to navigate, like they are on the iPad.

a word my son says—he's almost 4, so his diction leaves something to be desired—but my husband had a little trouble with it too. I demoed it for him, asking for *Seinfeld* and then filtering the results to "only episodes with Jerry Stiller" to get a list of episodes streaming on Hulu. Kids shows like *Octonauts* and *Ninjago* are easy to find if you pronounce them clearly, but sometimes it can take a couple of tries. The Phish documentary *Bittersweet Motel* wouldn't register over voice at all—turns out, when I did a text search, that it's not in iTunes, but the full movie is on YouTube, which isn't supported by Siri search.

Siri can even do a few other things, like tell you the weather or who won the World Series, but there's a lot she can't do: control HomeKit devices, set timers or alarms (no sleep timer), or deal with calls or messages. Siri can't search Apple Music at launch, although Apple says that functionality is coming "early next year." An API exists (go.macworld. com/sirisearchapi) for third-party developers to add Siri search support to their own Apple TV apps, but if Apple needs two more months to make it work with Apple Music (which already supports Siri search
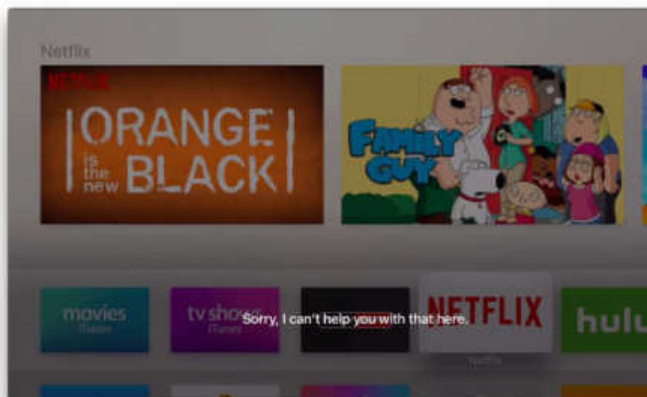
THE APPLE TV DOES act as a HomeKit hub, so you can control HomeKit devices when you are out of range of Bluetooth and your home Wi-Fi. But you can't use the Siri Remote to control HomeKit devices from a few feet away.

on iOS), that makes me worry a bit that "universal" search will be limited to iTunes, HBO, Showtime, Hulu, and Netflix for a good while longer.

SEARCHING WITH SIRI IS A BIG IMPROVEMENT TOO, ALTHOUGH IT'S GOT A LEARNING CURVE.

APP STORE: GOOD START, BUT IT'S GOT A WAYS TO GO

Unlike the old Apple TV, which threw every available channel at you by default, the new one comes with just iTunes movies and TV, Music, Photos, Computers (for using Home Sharing to stream your iTunes library), and Settings. Everything else you need to

add via the new App Store.

The App Store is great to have—it opens up new possibilities besides the video-streaming services you'd expect a set-top box to have. But the Apple TV isn't the first box to have an integrated App Store. Amazon's Fire TV and Roku both sport onboard app stores, and Fire TV even has games you can play with the remote or a Bluetooth gamepad, just like the Apple TV.

The problem with the Apple TV's App Store is discovery. Besides browsing through the featured selections, the only way to find apps is to search, a painstaking text search, letter by letter. There's no Siri support here, no list of categories, no top sellers list. You can't browse or purchase Apple TV apps on your Mac or in an iOS app. Roku's iOS app, for example, lets you browse the channel store, and both Roku and Amazon let you find and add channels via a web browser on your computer. This could all come along later via software updates, but it's disappointing to have such a crippled App Store to begin with.

Still, even at launch, the app lineup has amazing potential. I tried Zova, a fitness app with free workouts (and a premium subscription offer), which also has apps for the iPhone and the Apple Watch. Seeing the exercises on the big TV makes them even easier to follow along with, assuming you have enough room between your TV and couch to perform moves like lunges, planks, and jumping jacks.

Movile's Play Kids is here, which combines videos, games, and fun activities like crafts to make and drawing lessons. The same sub-
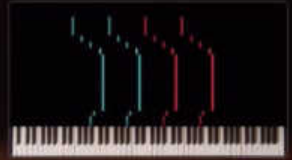

WITH SOME FREE WORKOUTS and a paid subscription, Zova is my new favorite fitness app for Apple TV.

Franz Liszt
Sonata in B minor

NoteFall

Score

Video

0:53   31:45

scription I bought in the iPad app carries over to the Apple TV, and parental controls let me hide any shows I don't want my son to see. (Sorry, *Caillou*—you whine too much!) Unlike on the iPad, where I have to download the shows to the device, the Apple TV lets my kid stream whatever he wants, but it's still a more controlled menu than, say, Netflix.

Smule's Sing! karaoke app pairs with your iPhone, so you can croon into that device's microphone while the words scroll by on your television. (At least, until the Apple TV screen-saver comes on halfway through "Piano Man"—sigh.) Speaking of music, Touchpress is a new way to experience classical music performances. You can see a video of a piece being performed, while also watching the score scroll by, and even the NoteFall graphic, which shows the keys being played in real time.

The App Store will surely expand quickly, but as it grows, Apple needs to make sure we can find apps that would most interest us, in case the featured selections don't really speak to us. Category listings and Siri search would be a big help, as well

TOUCHPRESS is an absolute must for fans of classical music.

as personalized App Store home-pages, like the new custom landing pages our Android-using friends enjoy in the Google Play Store.

BOTTOM LINE

The Apple TV feels like it had pains-taking attention paid to some places—the Aerial screensaver, for instance, is gorgeous, with gently moving videos of lovely places around the world, from San Francisco to New York to Hawaii. But I'd trade it in an instant for a way to type in passwords with my iPhone, an experience that was better on the old Apple TV.

If you're invested in the Apple ecosystem, the new Apple TV is a worthy purchase: AirPlay is an extremely convenient way to mirror your Mac or iOS device's screen to your television, and the Apple TV is
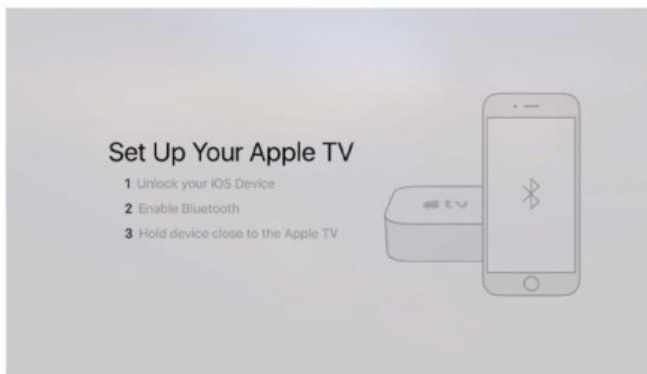
YOUR iPHONE CAN pass off your Wi-Fi credentials, but you'll still have to enter your Apple ID and all usernames and passwords manually, letter by letter. Hopefully that's the first thing Apple fixes.

of course the only set-top box that can play content rented or purchased from the iTunes Store. The Apple TV may have taken big strides to catch up to its competitors, but real revolution isn't being televised just yet. ∎

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{ REVIEW }

iMAC WITH 4K RETINA DISPLAY

A HIGH-RESOLUTION DESKTOP MAC FOR THE MASSES

{ BY JASON SNELL }

The Mac is a small fraction of Apple's total business, and of that, roughly three-quarters of the Macs sold are laptops. Apple could probably be forgiven if it put the entire iMac line into maintenance mode: after all, sometimes it seems like that's what most of the PC industry has done. But it's clear that Apple views the Mac in general and the iMac in particular as a point of pride. In a time when PC growth has stalled, Apple continues to grow its market share and update Mac hardware in interesting, innovative ways.

Last fall, Apple finally brought its high-resolution Retina display technology to the desktop for the first time on the 27-inch iMac with Retina 5K display. Now with the new 21.5-inch iMac with Retina 4K display (◆◆◆◆; apple.com/imac-with-retina) Apple has brought a brilliant high-resolution display to its smaller iMac at the same $1499 price as its previous high-end 21.5-inch iMac model. As you might expect, this new revision of the iMac dramatically improves on its predecessor models—the 21.5-inch iMac hasn't really been updated since late 2013, unless you count the addition of a budget model (go.macworld.com/imac211414) in 2014—but the highlight has to be the model featuring the Retina display.

In praise of Retina desktops

The new 4K iMac isn't the cheapest Retina Mac you can buy—both the MacBook and the 13-inch Retina MacBook Pro come cheaper—but it offers a much larger screen. Measuring at 4096 by 2304 pixels, that's 9.4 million pixels, providing a vastly broader work area than a 12-, 13- or even 15-inch laptop screen.

Yes, most Macs sold these days are laptops because they're powerful and flexible. But still, desktop Macs have their place. When I set up my home office, I wanted a workspace all my own, and not only does my

iMac's large screen make me more productive, but it provides me with a bit more work/life balance, because I need to be in my office, at my desk, to make use of it. iMacs can also be public devices in a way that laptops can't—I know many families who have placed an iMac in the family room and share it, rather than passing around a laptop (or spending the money on multiple laptops).

Then there's the power of the Retina display itself. Like last year's 27-inch 5K model, the main feature of the 4K iMac is its beautiful display, powered by all sorts of amazing technologies that allow Apple to drive those 9.4 million pixels. If you've been through the Retina transition on an iPad or iPhone or MacBook, you know how much nicer a screen can be when you can't see the pixels at all.

When four pixels are doing the work that only one used to do, the El Capitan interface really shines. Everything's sharper. Photos look startlingly real, almost like they were printed on paper. And then there's text, which looks razor sharp like it just rolled out of a laser printer. Even toolbars and Dock icons are more pleasant because all the onscreen graphics have added subtle details that were impossible at lower resolutions.

There's also a whole lot of flexibility with a Retina display. Because the pixel count is so high,

THE BIGGEST CHANGE ON THE OUTSIDE OF THE CASE IS THE ADDITION OF FASTER THUNDERBOLT 2 PORTS, REPLACING THE THUNDERBOLT 1 PORTS ON THE OLDER MODELS.
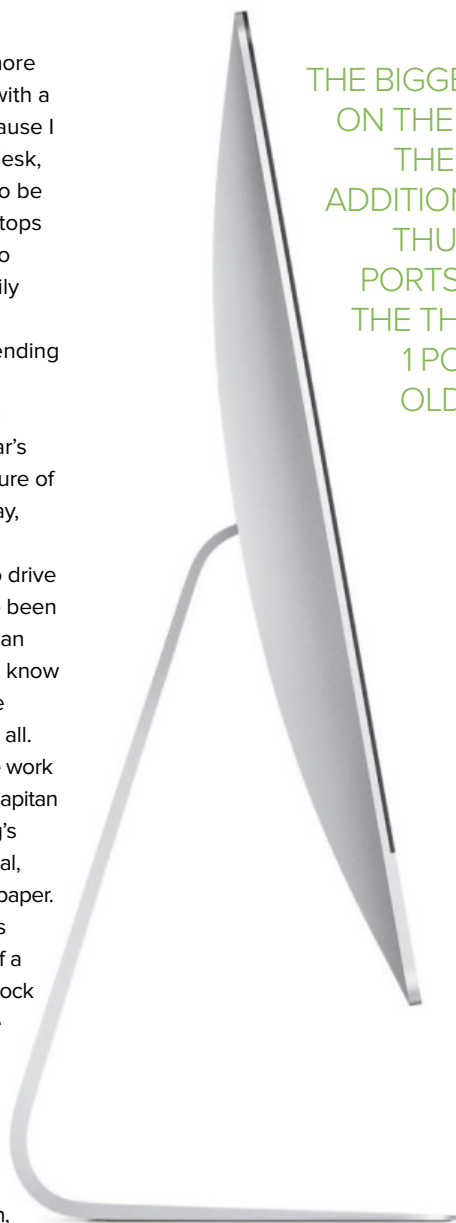
these screens can be set to alternate resolutions without sacrificing image quality. Want everything to be a little bit bigger? Go to the Display preference pane and set the 4K iMac to emulate a smaller monitor. Want a little more room in which to work? Set the iMac to display a higher resolution instead. The system does all the conversion and scaling on the fly, effortlessly.

Apple says that the display in this 4K iMac, as well as the revision to the 5K iMac that was announced the same day, offers an expanded color space. Thanks to new red-green phosphor LEDs, the displays can display a wider range of red and green light than before, allowing them to display 25 percent more colors.

In a demo at Apple, I was able to detect subtle differences. The new displays can offer more color detail and more vibrancy than the display on the older 5K iMac models. I'm a little red-green color blind, and even I could detect the differences. If you work in graphics or video, you'll probably be happy to have access to a display that's capable of displaying 99 percent of the P3 color space. But for most people buying the 4K iMac, the real difference will be the mind-blowing jump to Retina.

A long awaited update

On the outside, the 4K iMac (and its other 21.5-inch sisters) look exactly

Geekbench 3 SINGLE-CORE 64-BIT

3.1 GHz 21.5" 4K iMac	3,783
3.3 GHz 27" 5K iMac (Mid 2015)	3,691
2.9 GHz 21.5" iMac (Late 2013)	3,543
2.7 GHz 21.5" iMac (Late 2013)	3,175

LONGER IS BETTER. GEEKBENCH BY PRIMATE LABS.

Geekbench 3 MULTI-CORE 64-BIT

3.1 GHz 21.5" 4K iMac	12,799
3.3 GHz 27" 5K iMac (Mid 2015)	11,769
2.9 GHz 21.5" iMac (Late 2013)	10,685
2.7 GHz 21.5" iMac (Late 2013)	10,199

LONGER IS BETTER. GEEKBENCH BY PRIMATE LABS.

like those late-2013 models: They're all the same design, thin at the edges but bulging in the back, where the iMac attaches to its metal foot. The 4K iMac is exactly the same in dimensions and weight as the previous model. The biggest change on the outside of the case is the addition of faster Thunderbolt 2 (go. macworld.com/thunderbolt2) ports, replacing the Thunderbolt 1 ports on the older models.

On the inside, the 4K iMac (like the other new 21.5-inch models) is powered by fifth-generation Intel Core processors, known as Broadwell. According to Apple, the newer Skylake (go.macworld.com/skylake-cpu) sixth-generation processors aren't yet available with the integrated graphics processors that Apple has chosen to drive these models, so it's

iMAC WITH 4K RETINA DISPLAY/ 3.1GHZ (LATE 2015)

PROS
- Gorgeous Retina screen
- Thunderbolt 2 support

CONS
- Fast flash-storage available as an option
- Hampered by slow 5200 rpm hard drive
- Discrete GPU available only as configuration option
- Uses previous generation Intel chipset

PRICE

$1,499

COMPANY

Apple

sticking with Broadwell. (The new 27-inch iMac models, which are powered by separate GPUs, do use Skylake processors.)
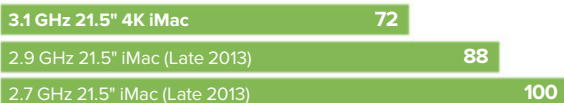
Still, Broadwell's an upgrade from the previous-generation Haswell processors used in prior 21.5-inch iMacs. Despite the quadrupling of pixels that comes with a Retina display, the 4K iMac was still able to outpace its predecessors at most OpenGL rendering tests. In CPU tests, it even outpaced the mid-2015 revision of the 27-inch 5K iMac. However, this iMac's Intel Iris Pro 6200 integrated graphics are no match for the discrete GPUs in the 27-inch 5K iMac models from last year, let alone this.

Storage, good and bad

The base storage configuration of the 4K iMac is a 1TB, 5400rpm hard drive. It's been a few years since I regularly used a Mac with a spinning disk as its primary hard drive, and man, did it feel slow. Starting up was slow. Launching apps was slow. Everything...just...took...longer. It's disconcerting to take a brand-new, top-of-its-line Mac out of the box and be disappointed by how sluggish it feels, but that's what I experienced, and it's pretty much down to that slow hard drive.
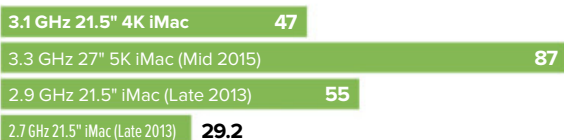
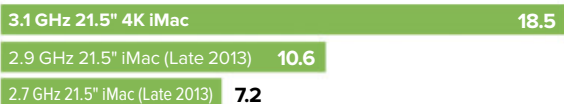Yes, Apple has packed an impressive amount of technology into this

Cinebench R15 CPU

3.1 GHz 21.5" 4K iMac	72
2.9 GHz 21.5" iMac (Late 2013)	88
2.7 GHz 21.5" iMac (Late 2013)	100

SHORTER IS BETTER. TIMED TEST; RESULTS IN SECONDS.

Cinebench R15 OPEN GL

3.1 GHz 21.5" 4K iMac	47
3.3 GHz 27" 5K iMac (Mid 2015)	87
2.9 GHz 21.5" iMac (Late 2013)	55
2.7 GHz 21.5" iMac (Late 2013)	**29.2**

SHORTER IS BETTER. TIMED TEST; RESULTS IN SECONDS.

Unigine Heaven 1920 X 1080 OPENGL

3.1 GHz 21.5" 4K iMac	18.5
2.9 GHz 21.5" iMac (Late 2013)	**10.6**
2.7 GHz 21.5" iMac (Late 2013)	**7.2**

LONGER IS BETTER. RESULTS IN AVERAGE FRAMES PER SECOND.

Unigine Heaven 1280 X 720 OPENGL

3.1 GHz 21.5" 4K iMac	47.3
2.9 GHz 21.5" iMac (Late 2013)	43
2.7 GHz 21.5" iMac (Late 2013)	37.2
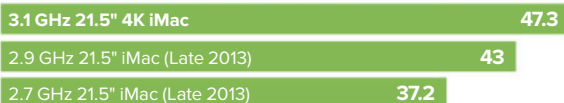
LONGER IS BETTER. RESULTS IN AVERAGE FRAMES PER SECOND.

$1499 iMac, but it seems almost unforgivable that a Retina iMac could be saddled with a slow spinning hard drive. You can pay a bit extra to equip a Fusion Drive, which combines the capacity of a spinning disc with a small amount of speedy flash storage, and I'd recommend that. (In fact, Apple has made it more affordable than ever to opt for a Fusion Drive configuration by reducing the amount of flash storage in the 1TB configuration from 128GB to

24GB. If you regularly use large media files, you'll want to opt for the larger Fusion Drive or pure flash storage, but the cheaper configuration is a great option for users who don't stress out their Macs quite as much.)

Speaking of flash storage, the 4K iMac (and all of its fellow late-2015 iMacs) benefits from the same storage speed boost that we saw earlier this year on the MacBook Pro: These models can take advantage of upgraded storage controllers and 4 lanes of PCI to achieve flash-storage transfer speeds up to 2.5 times those of previous models. All the more reason to jump off the spinning-hard-drive train before it crashes and switch to a Fusion Drive or pure flash storage.

Now with new input devices

The 4K iMac and its fellow iMacs are the first Mac models to ship with Apple's new generation of input devices, the Magic Keyboard and Magic Mouse 2 (or, optionally, the Magic Trackpad 2). Those devices are outside of the scope of this review but suffice it to say that they're thin, they're rechargeable, they pair with the iMac with the simple plug of a cable, and they feel pretty good. If you buy the 4K iMac, they'll be a nice bonus. Check out our reviews of the Magic Trackpad 2 and Magic Mouse 2 in this issue.

Bottom line

The 5K iMac is an incredible computer, one of the best Macs ever made—but it's also just too much for many people. A 27-inch display can dominate a desk or a room, and though the price tag has come down a lot in the past year, it's still on the pricey side. In contrast, here's the iMac with 4K Retina display. It offers a lot of screen space but isn't awkward to maneuver around a table top. The prices on the three models are more reasonable, though you'll want to upgrade the hard drive to a Fusion Drive or pure flash storage if it fits within your budget.

Most importantly, it's got that screen: 9.4 million pixels of screen, making your photos and your webpages and your word-processor documents and even the text of your emails look substantially better than ever before. Retina has arrived on Apple's most affordable iMac model. You won't regret the upgrade. ■

"SURE, AT FIRST I WAS A LITTLE TAKEN ABACK BY THE WHOLE PEEING STANDING UP THING. BUT I TAUGHT HIM TO THROW A STICK AND NOW HANGING OUT WITH HIM IS THE BEST PART OF MY DAY."

—EINSTEIN
adopted 12-09-10

A PERSON IS THE BEST THING TO HAPPEN TO A SHELTER PET

adopt

theshelterpetproject.org

Handy iOS and OS X accessibility features everyone should know

Enhance your interface with these features built right into the operating system.

BY CHRISTOPHER PHIN

For a long time, Apple has had a commendable focus on building assistive technologies into its operating systems, making it easy not just for many people with a wide range of disabilities to enjoy its products, but also easy for developers to implement them in their apps.

If you're non-disabled, though, you may never have clicked the Accessibility pane in System Preferences on your Mac or tapped the Accessibility submenu on your iPhone. But here's the thing: these sections are stuffed full of useful features that *everyone* should know about, and happily, by the time you've finished reading this, you will.

We're not going to show you every accessibility feature Apple has provided, since this particular article isn't about *accessibility* as such. We're not diminishing the value of accessibility itself, and we hope that anyone who relies on these features won't take it amiss when we make the point here that they're *also* useful to people who don't have the kinds of impairments they're designed to assist with.

What sort of features do we mean? Well, let's get right to it!

ADD QUICK SHORTCUTS— AND AN ONSCREEN HOME BUTTON

If your iPhone's Home button is broken, the best-case scenario is that you can't use your phone while you wait for a repair, and the worst-case is tossing the phone entirely, right? Wrong! Enable Assistive Touch from Settings ➔ General ➔ Accessibility and you get a floating button which persists wherever you are in the system (though you can drag it around out of the way); tap it, and you get access to a special pop-up menu of options, one of which by default is the Home button.

You can build your own palette of useful shortcuts, even defining custom gestures, and if you have an iOS device that supports 3D Touch, you can define an action for a hard press on the floating button.
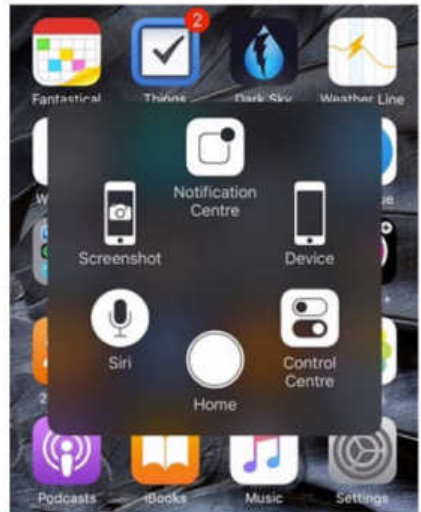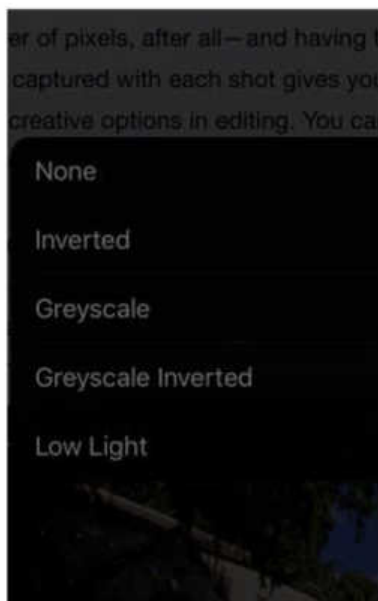
DIM THE SCREEN EVEN FURTHER

If your iOS device's screen is too bright even at its lowest setting, waking a sleeping partner or baby at night, say, you can reduce it further. Make a small adjustment by toggling Reduce White Point in Settings ➜ General ➜ Accessibility ➜ Increase Contrast.

A more effective option is enabling Zoom in the Accessibility menu (Settings ➜ General ➜ Accessibility). We're not actually going to use zoom as such, but triple-tapping anywhere on the screen with three fingers brings up a menu: tap Choose Filter then tap Low Light.

USE GUIDED ACCESS TO STOP PEOPLE FROM LOOKING AT STUFF THEY'RE NOT SUPPOSED TO

Until everyone in the world learns that when you hand them your phone to show them a photo or video they should politely do just that *and not start swiping left and right to look at other pictures*, you might need this trick. Once you've set it up, you just discreetly triple-click the Home button as you pass your phone over, and they won't be able to swipe or press the Home button to switch to another app. Triple click again when you get it back and enter a password, or use Touch ID, and it's unlocked for you.

Turn on Guided Access from the Accessibility menu in Settings and set a passcode. Go to the app you want to lock—Photos, in our example, but it could be anything except the Home screen or Settings—and triple-click the Home button. From the menu that pops up at the bottom when you tap Options, toggle the switch to ensure Touch is turned off, then start Guided Access.
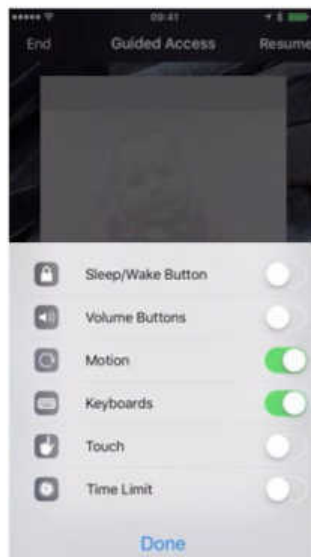
This mode has a few other benefits, like not allowing photos to be deleted (go.macworld.com/disable-photosdelete).

FLASH THE LED FOR ALERTS
If for some perverse reason you pine for the glory days of BlackBerry, you can have your iPhone flash the LED beside the rear camera whenever a notification comes in; look for the option in the Hearing section of Settings ➡ General ➡ Accessibility. Note that the flash really is quite bright!

ADJUST THE PRESSURE OF 3D TOUCH
Got a 6s or 6s Plus? If you wish you could use a lighter or a heavier touch to trigger 3D Touch events, head to the 3D Touch section in Settings ➡ General ➡ Accessibility.

A FEW AESTHETIC THINGS
Hidden away in Accessibility are a few options you might want to tinker with whose role, as well as helping people who have a disability, can be to tweak the look of your iPhone. Check out the options in Settings ➡ General ➡ Accessibility to reduce transparency, darken colors, draw shapes around buttons to make it clearer that they *are* buttons, force the keyboard in iOS 9 always to show upper-case characters like it used to, change the size of text, and use bolder text. ∎

Remove extra application files with AppCleaner

When you uninstall a Mac app, how can you make sure you've removed all of its files? With an app like AppCleaner.

BY JEFFERY BATTERSBY

One of the many great things about the Mac OS is how easy it is to install and remove applications.

To install: Download an app from the App Store and it's automatically dropped into your Applications folder and ready to use.

Or: Download an application directly from a developer and drag the app to your Applications folder. Once again, ready to use.

And, yes, there are also application installers, such as those for apps like Microsoft Office and BusyCal (busy-mac.com/busycal) that handle more sophisticated installations that won't work with a simple drag and drop.

Uninstalling apps, by all appearances, is just as easy: Drag an app to the Trash. Empty the Trash. Buh bye!

This works because apps on your Mac are actually a special type of folder that contain all the stuff necessary to make the application work. App icons, pictures on buttons, images in the apps preferences, and even the binary file that makes an application perform whatever task its designed for are all stored inside the application. If you're curious, control-click any app, select Show Package Contents from the contextual menu that appears, and look inside the app's Contents folder.
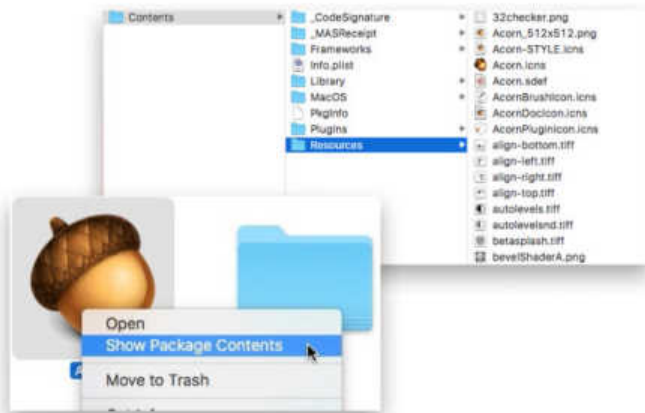
Inside you'll see everything that app needs to do its work.

While dragging and dropping applications provides an easy way to install apps, unfortunately, the drag-and-drop method of deleting apps by moving them to the Trash still leaves a tangle of small files spread around your Mac's hard drive. Don't believe me? Have a look inside the Preferences folder inside your User Library folder and you're likely to find a pile of preference files for apps you haven't used in years or, if you've upgraded your Mac a few times, that you haven't had or used in many years.
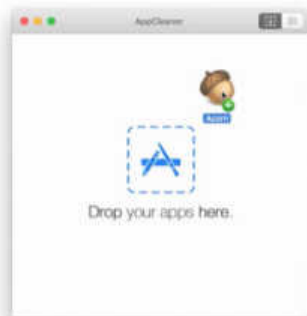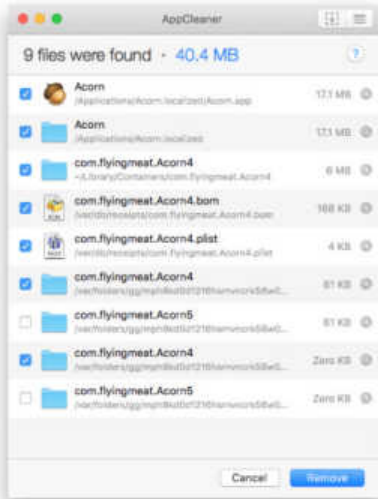
How do you get rid of the extra files leftover after you delete an app? Well, you could waste time digging around in your Preferences folder and delete files you don't think you need (**not** recommended). Or you could start using FreeMacSoft's excellent AppCleaner app (freemacsoft.net/appcleaner) and let it handle the dirty work for you.

AppCleaner works its magic in two ways: You can drag apps to the AppCleaner window or you can turn on AppCleaner's SmartDelete feature and it will automatically find any extra files that need to be deleted every time you drag an app to the Trash.

To use the AppCleaner app to remove apps:

1. Open the AppCleaner app.
2. Drag an app to the AppCleaner window.
3. Make sure there are check-marks next to the files you want deleted.
4. Click the Remove button.
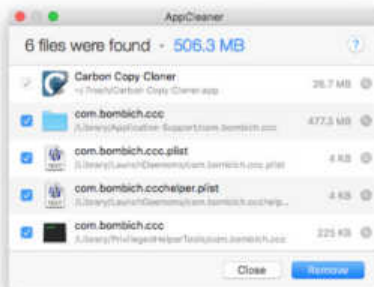5. Authenticate as an administrator.

The app and its associated files will get moved to the Trash.

AppCleaner's drag-and-drop method of deleting applications is easy, but the app offers an even easier way to delete applications: SmartDelete.

To turn this feature on:

1. Open AppCleaner.
2. Open the AppCleaner Menu from the menu bar and choose Preferences.
3. Click the tab that says Smart-Delete and flip the switch to on.

Once you've done this, you can quit AppCleaner.

To delete an app using SmartDelete:

1. Drag any app to the Trash.
2. Authenticate as an administrator.

When the app moves to the Trash, AppCleaner will automatically scour your hard drive for files related to your deleted app. When the found files window opens, make sure you want to delete the files listed, then click the Remove button.

Any apps you Remove using AppCleaner are moved to the Trash, so as long as you don't empty the Trash, if you decide you don't want to delete an app all you need to do is move it from the Trash back into the Applications folder. ■

How to print a webpage as a PDF with links that work

Trying to print a webpage and keep the links working? Use Safari or a Chrome extension.
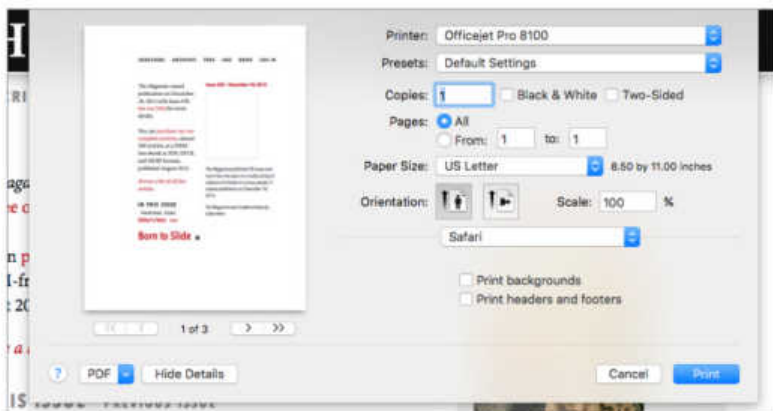
BY GLENN FLEISHMAN

My friend Swoozy got in touch: She needed to print some articles she'd written for the web as PDFs, but wanted to keep the links intact, so that those receiving them could follow them. It's an easy proposition with a few options.

Web browsers render the text on a page as rich text in different ways—you can see this when you copy text from a webpage and paste it into a Word, Pages, or TextEdit document. Safari seems to handle using the built-in print-to-PDF function in OS X perfectly well, preserving a reasonable amount of formatting, as well as keeping hyperlinks marked and active.

1. Visit a webpage in Safari.
2. Select File ➔ Print.
3. In the PDF drop-down menu (lower left), select either Open PDF In Preview or Save As PDF.

In my testing of Firefox and Chrome, just as I recall from previous attempts, the rendered rich text doesn't pass through Apple's PDF engine with links intact. However, there's a third-party extension you can use in Firefox and Chrome to help with that: Print Friendly (print-friendly.com/browser_tool). It's also available for Safari.

While it's designed to reduce waste when printing webpages, it's also a very nice way to produce cleanly formatted PDFs that retain hyperlinks. The only thing I've noticed is on pages that use pop-ups and footnotes to avoid cluttering a page, those items are stripped out along with other formatting. ■

Death to passwords! New Yahoo Mail protects with push notifications instead

Yahoo's offensive against the password is almost complete with Yahoo Account Key.

BY IAN PAUL

Yahoo began its assault on the password in March with SMS-based two-factor authentication (go.macworld.com/yahoo2factor), and now the company wants to finish what it started. Recently, Yahoo announced Yahoo Account Key (go.macworld.com/yahooacctkey), a password-less method of logging in to Yahoo Mail that will roll out to other Yahoo services in the coming months.

Account Key effectively works like two-factor authentication, allowing you to authorize new logins via your smartphone or tablet. The only difference is Account Key is not a secondary backup measure that kicks in after you've entered your password: it is the primary way you access your account.

Yahoo's approach doesn't rely on the user entering a code received from an authenticator app or SMS. Instead, when you try to log in to Yahoo Mail a notification gets sent to your mobile device without entering a password.

From there you can either hit a Yes or No button to authorize access. This is similar to how Twitter handles second-factor authentication (go. macworld.com/twitter2factor), but again, Yahoo's approach is the primary way you will access your account.

Account Key is rolling out alongside a new Yahoo Mail mobile app that features a new look, a faster way to search for items by sender, keyword search suggestions, and an improved compose interface.

Yahoo Mail is also adding support for Outlook.com and AOL email addresses, allowing you to access these accounts inside Yahoo Mail, including on the revamped mobile app. Multiple account support must first be enabled on the desktop and is only available to U.S. users at launch.

The refreshed Yahoo Mail mobile app is available now worldwide on iOS and rolling out to Android users over the next few weeks. ■
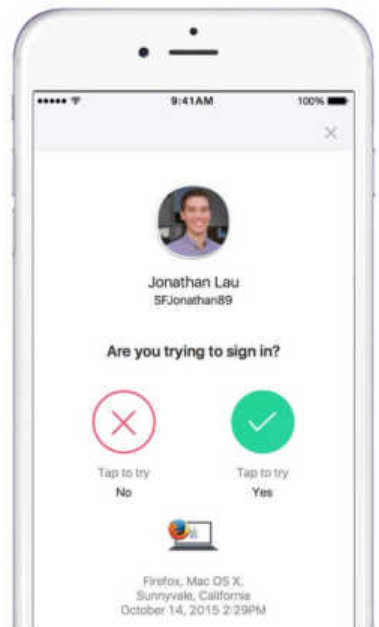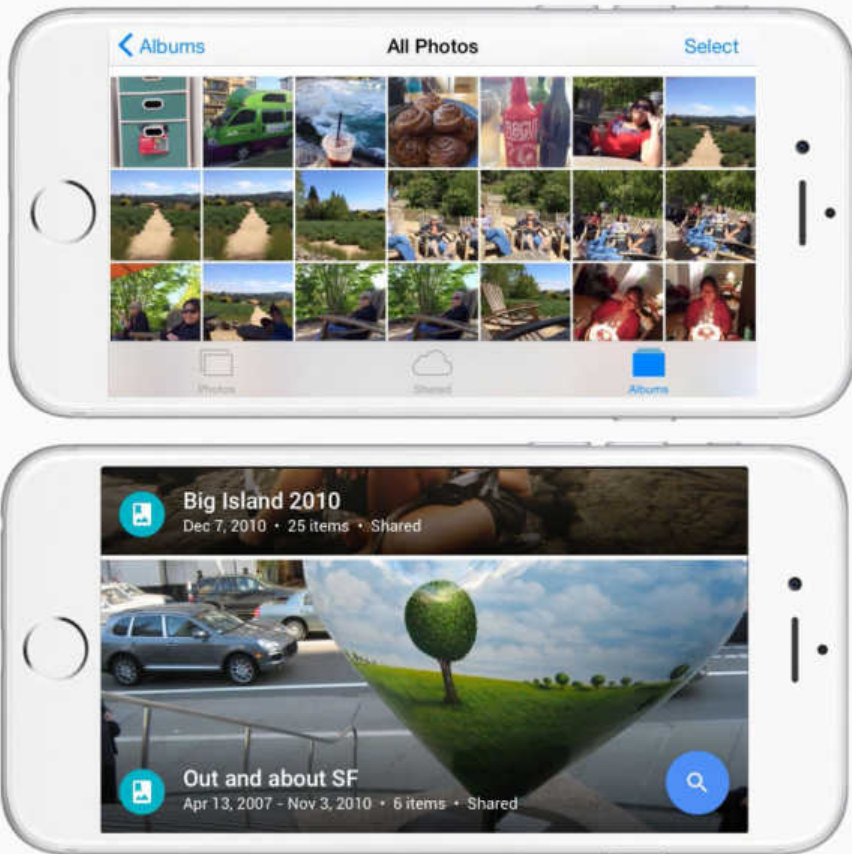
Apple Photos and Google Photos:
Two photo apps compared

Which app should you use to organize your photo collection?

BY LESA SNIDER

With rapidly expanding image and video collections, three things are hot on everyone's wish list: constant and automatic backups to an offsite location, having your entire image and video library available on all your devices, and having the edits you make to an image on one device show up on your other devices.

Both Apple Photos and Google Photos offer these insanely great, sanity-saving features, but how do the apps really stack up? I'll put Apple Photos against Google Photos and discover just how similar (or different) they are when it comes to storage, importing, organizing, editing, sharing, and creating projects. As you're about to learn, Google Photos grants a couple of wishes that you didn't know to ask for.

STORAGE AND COST

Apple gives 5GB of free storage space to anyone who signs up for an iCloud account, but that storage is also used for your iOS device backups, documents, and your image/video library. If you're the slightest bit snap-happy, you'll blow through 5GB at warp speed, but you can buy more space. As of this writing, Apple's monthly storage rates for iCloud Photo Library (apple.com/icloud/photos) are:

> 5GB: free
> 50GB: $1
> 200GB: $3

> 1TB: $10

Raw files are welcome and your images are stored in their original size at full quality.

Google Photos is free, with limitations. You can enjoy unlimited storage for images up to 16 megapixels (which far exceeds what today's iOS devices can capture), and videos up to 1080p (4K videos are supported with the Google Originals plan, discussed momentarily). Images and videos that are bigger get downsized; however, everything is optimized (compressed) into high-quality versions (this algorithm is applied in the cloud, not on your devices). Raw files are stored as JPEGs on Google's High Quality plan—that said, it's next to impossible to spot any quality loss, especially if you're viewing imagery on mobile devices.

You can choose to store original images (raw files included) by choosing Google's Originals plan. Google grants 15GB of free storage space to that end, though your Gmail (messages and attachments) and

Google Drive storage space count against it. As of this writing, Google's monthly storage rates (go.macworld.com/googlerates) are:

> 100GB: $2
> 1TB: $10
> 10TB: $100
> 20TB: $200
> 30TB: $300

Storage space pricing for safe-guarding your originals is nearly the same until you reach a terabyte, at which point Google's pricing is half that of Apple's and, as of this writing, Apple's storage options top out at 1TB whereas Google Photos offers up to 30TB. If you're okay with Google's high-quality plan, you don't have to pay a cent (unless you routinely make giant prints, this is a great trade-off).

IMPORTING

Both Apple Photos and Google Photos sport mobile and desktop methods for importing and viewing your library.

With the Google Photos app on your iOS device, any picture and videos you take (or save to the device) automatically show up in Google Photos like they do in Apple Photos (via iCloud Photo Library or My Photo Stream). Importing images on your desktop works similarly in both apps—you can drag and drop

pictures (or folders of them) into a web browser pointed at photos.google.com or onto the Apple Photos window or its app icon (though by default the app opens automatically whenever you connect an iOS device to your Mac).

If you download the Google Auto Backup (go.macworld.com/googleautobackup) desktop app, you can designate specific devices (cameras and storage cards) and desktop folders for automatic uploading to Google Photos.

Apple's older iPhoto has a hidden folder that you can manually drop goodies into for automatic importing into the app—Control-click the iPhoto library and choose Expand Package Contents to find the auto import folder—Photos doesn't (yet) and you can't (yet) set up an Automator workflow to do it either.

If you shoot in raw format and you want Google Photos to see edits you make in a raw processor (say, Adobe Lightroom or Camera Raw), you must
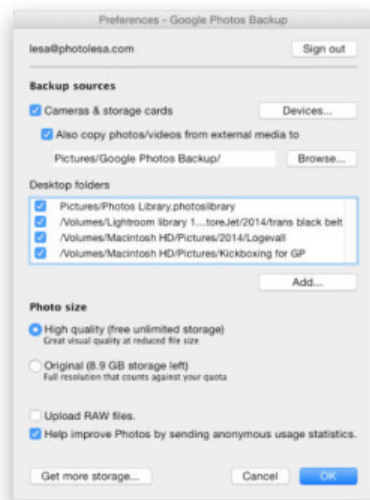
GOOGLE PHOTOS BACKUP preferences lets you designate devices and folders for auto uploading. If you include your iPhoto or Photos library, anything you import into them gets uploaded to Google Photos, too (this trick doesn't work with Adobe Lightroom catalogs).

export and upload the images as JPEGs (pushing your edits into the metadata in those apps won't work). To that end, Lightroom users can easily create an export preset (called a Publish Service) for this and then specify the destination folder for automatic upload as mentioned earlier. Why would you do this? To use Google Photo's easy web sharing and nifty Creations, which I'll get to in a bit.

VIEWING AND SELECTING

The interfaces for both Apple Photos and Google Photos are wonderfully spartan, though the Google Photos interface takes some getting used to as commands are a bit hidden, but you can master it quickly. Both apps display your digital mementos in a grid-like fashion in chronological order, though the most recent appear at the top in Google Photos whereas they're at the bottom in Apple Photos.

If you're using Apple's iCloud Photo Library, all your digital goodies are synced between your devices and thus appear in the Photos app on those devices, though they're also accessible (and downloadable) in a web browser. The same is true of Google Photos, but there's no Mac app for viewing or selecting—you use a web browser.

Both apps let you quickly select
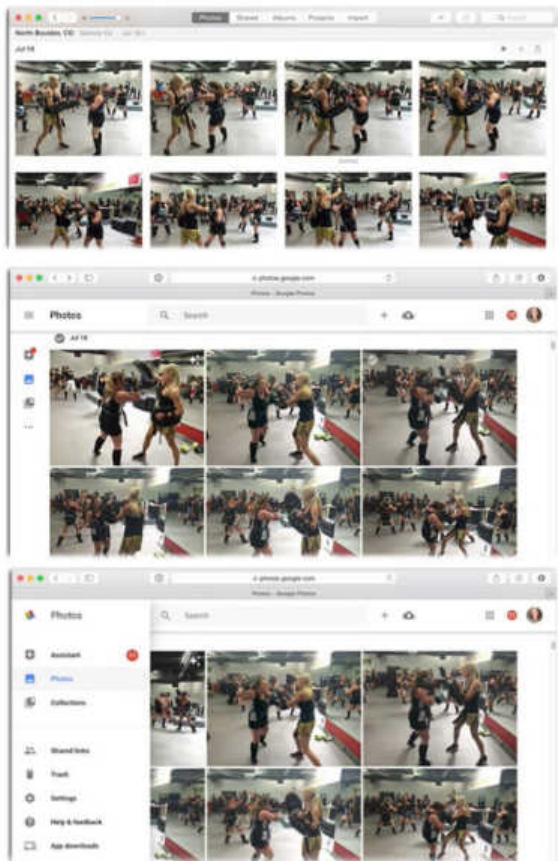
VIEWING IMAGES IN Apple Photos (top) and Google Photos on your desktop (middle) is similar. To open the Google Photos menu (bottom), click the icon at upper left that looks like four lines.

all the images taken on a certain date or within a certain time period, so you can add them to an album or project. You can also select images manually by clicking their thumbnails or by Shift- or Command-clicking to grab multiples. Apple Photos for

Mac also lets you create folders to, say, corral several albums and projects into one container, and you can do the same thing in Google Photos using Collections.

Google Photos' mobile app has additional viewing and selecting tricks that Apple Photos for iOS lacks. A pinch gesture zooms in or out of your collection chronologically to see Year and Moments views wherein thumbnails are summarized like they are in Photos, and a handy slider lets you quickly scroll through months (an overlay appears telling you which month you're flying past). Tap and hold your finger atop a thumbnail to enter selection mode, and then drag up, down, or across to select multiple thumbnails at once. When you make a selection, a blue menu bar appears with a standard share icon, a plus sign that lets you create a new album, movie, story, animation, or collage, as well as add the selected thumbnails to an existing album, and a trash icon for deleting.

ORGANIZING AND FINDING

Both Apple Photos and Google Photos analyze the content of your images in order to organize them, but Google Photos really shines in this area.

Apple Photos' automatic organization prowess extends to facial recognition and some self-populating albums (last import, videos, bursts, panoramas, etc.), but Google Photos automatically organizes them by people as well as places and things. For example, if it recognizes a landmark—say, the Eiffel Tower or the Colosseum—it automatically assigns a location tag. As of this writing, Google Photos doesn't let you add location data manually, though Apple Photos in OS X El Capitan does.

Google Photos also organizes images according to what's in them—food, flowers, dogs, cats, skies, forests, waterfalls, or whatever. To do this in Apple Photos, you have to create and assign keywords and then make smart albums—self populating albums based on criteria you set—to gather them. You can't manually create smart albums in

IN THE GOOGLE Photos mobile app, you can pinch your way in or out of Year or Moments view (left). You can also tap and then drag your finger diagonally between the two thumbnails circled here to select everything in between (right).
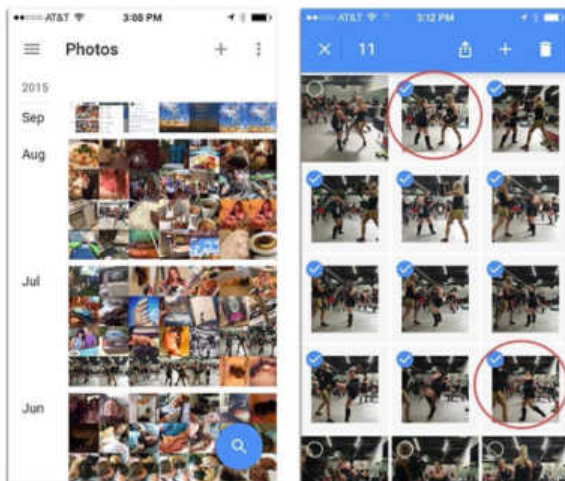
Google Photos.

Apple Photos also lets you choose favorite images or hide images; Google Photos doesn't. Both apps sport an Info panel for viewing metadata and for entering a description. While Google Photos doesn't yet let you add keywords per se, you can tuck them into the description and then use the search field to find them.

EDITING

Editing in both apps is non-destructive, so you can always revert to your original.

Apple Photos for Mac's editing options include Enhance (think auto-fix), Rotate, Crop (with aspect ratio control), Filters, Adjust panel, Retouch (for zapping blemishes and small objects) and Red-eye tools. In OS X El Capitan, Apple Photos for Mac lets you access third-party plug-ins for even more editing power through a feature called Extensions. The Adjust panel houses smart sliders that let you fix lighting and color without destroying your image and create beautiful black-and-white images. These three smart sliders also include powerful sub-sliders that let you fine-tune what the smart sliders are doing (for example, you can reset your image's black point, fix a color cast, and tweak the tonal mix of a black-and-white).

Dig deeper into the Adjust panel
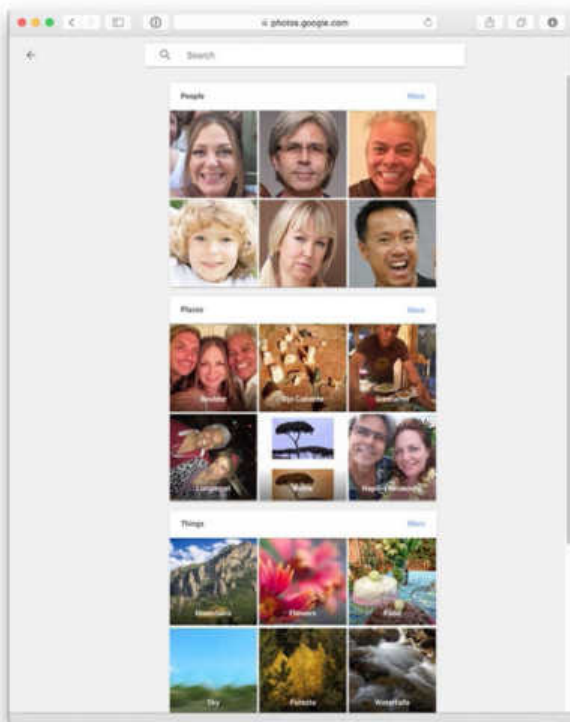
and you find seriously advanced adjustments (à la Aperture) such as white balance (you get an eyedropper, plus tint and temperature sliders), Levels (it has eight adjustable sliders in four different histograms), definition, noise reduction, vignette (strength, radius, and softness), and sharpening (intensity, edges, and falloff). Whew! However, those six advanced adjustments, as well as the Retouch tool, aren't in Apple Photos for iOS.

Apple Photos for Mac lets you

AS A RESULT of Google Photos' automatic organization, its search feature feels more robust than Apple Photos' when you first start using it...or at least until you force yourself to apply keywords in Apple Photos.

copy edits made to one image and then paste them onto another, which you can't do in Apple Photos for iOS or in Google Photos (mobile or web versions).

In Google Photos, you get the same lean-yet-useful editing tools whether you're in a web browser on your Mac or in the mobile app. An Auto button prompts Google Photos to fix the image for you, though you can take matters into your own hands using the Light and Color sliders—they're similar to Apple Photos' smart sliders, but you don't get any sub-sliders for more advanced adjust-ments. The Pop slider lets you boost color and add contrast to areas without destroying skin tones, and an intelligent Vignette slider produces a dark-edge vignette centered on your subject and not the center of the

image like the one in Apple Photos for Mac (you can't add vignettes at all in Apple Photos for iOS).

Google Photos also has a Crop tool which lets you rotate and crop an image, though you can't pick a specific aspect ratio like you can in Apple Photos. However, if you draw a box that's nearly square, Google Photos snaps the crop to a square—if not, you're in freeform crop land.

Overall, Google Photos' lean editing toolset means quicker editing, but those who crave more power can easily pass images from Google Photos to Google's popular (and powerful) editing app, Snapseed (go.macworld.com/snapseed). You can also apply 14 tasteful filters in Google Photos, compared with (as of this writing) eight in Apple Photos.

THE EDITING TOOLS in Apple Photos for iOS (first three from the left) aren't as discoverable as those in Google Photos mobile app (far right), but they're more robust.

110

After a few months of using both apps on my iPhone, I favored Google Photos for its editing speed and the ability to add a vignette.

SHARING AND PROJECTS

Sharing images in both apps via message, email, social media, and with others is easy, though as of this writing you can't create a new Facebook album with Google Photos like you can in Apple Photos, which is a bummer.

When it comes to sharing images with other people outside of social media, Google Photos does it with a web link instead of shared albums like Apple Photos (which also has an option for creating a public web gallery). This means you can't manage subscriber invitations and privacy options in Google Photos like you can in Apple Photos. Anyone you share a Google Photos link with can add their own images which you can then easily add to your Google Photos library (if you share raw files, your buddy gets JPEGs and vice-versa).

When it comes to creating image-related projects, Apple Photos excels at print stuff such as books, cards, and calendars—you can't make any

of that with Google Photos.

Movies can be made in both apps by combining stills and video, and you can customize your work by picking a soundtrack and theme, though only Apple Photos lets you add captions. On the other hand,

Google Photos can create stuff that Apple Photos can't such as animations and collages, it can stitch panoramas, and combine images and videos into linear, scrollable stories complete with a little map. In fact, the Google Photos Assistant automatically assembles these goodies, called Creations, for you. If it detects five or more images in a sequence, it creates an animated GIF that you can save and export. Other Creations include collages, stories, creative image treatments

GOOGLE PHOTOS' ANIMATED GIFs are handy for sporting events when you meant to capture video instead of stills. The app even duplicates a few frames to give it a looping effect.

(think filters and edge effects), and movies.

To see suggested Creations, open the Google Photos Assistant. From there, you can discard the ones you don't like or save, share, and download the ones you do. If you're on the mobile app, you can also edit Creations as well as make new ones. That said, Apple's new Live Photo feature—debuted on the iPhone 6s—automatically captures three

seconds of video surrounding each shot you take.

BOTTOM LINE

It's tough to say which app you should use, as it comes down to which company you trust more with backing up your imagery: Apple or Google. Happily, you don't have to pick one app over the other; you can easily use both to their strengths and sit tight until they mature. ■

How to edit photos in iOS using Photos' Adjustments panel

There's more power in the Photos for iOS app than you might realize.

BY LESA SNIDER

Apple probably thinks that not everyone wants to spend a ton of time correcting images. Heck, lots of people are content with a quick click of the Enhance tool in Photos for Mac or iOS, but that tool can't fix every picture you take.

If you want to lighten only the shadows, darken only the highlights, boost contrast, change color saturation, and more, you need the advanced editing power nestled inside the app's Adjustments panel. Many folks have discovered and used that panel in Photos for Mac but they don't realize that it exists in Photos on your iOS device, too. It lacks some advanced adjustments you can use in Photos for

Mac (histogram, sharpening, noise reduction, vignette, and so on) but it's well worth using. Since the screens on iOS devices are so small, it takes some tapping to reveal its hidden—and outrageously powerful—controls.

SUMMONING THE ADJUSTMENTS PANEL ON YOUR iOS DEVICE

To open the Adjustments panel in

TAP THE ICON circled (left) to open or close the Adjustments panel (middle). Tap the name of the adjustment (say, Light) to open its smart slider (right).
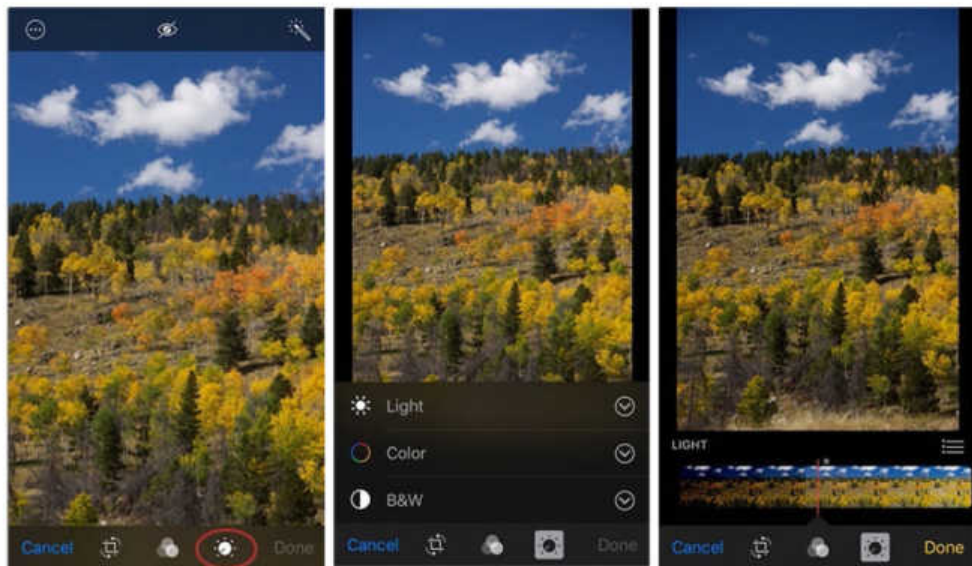
Photos for iOS, select a
picture, tap Edit at the
upper right of your device's
screen, and then tap the
icon that looks like a little
dial. Once the panel opens,
tap Light, Color, or B&W to
open its respective *smart
slider*: a row of thumbnails
that give you a preview of
what that particular adjust-
ment will look like once
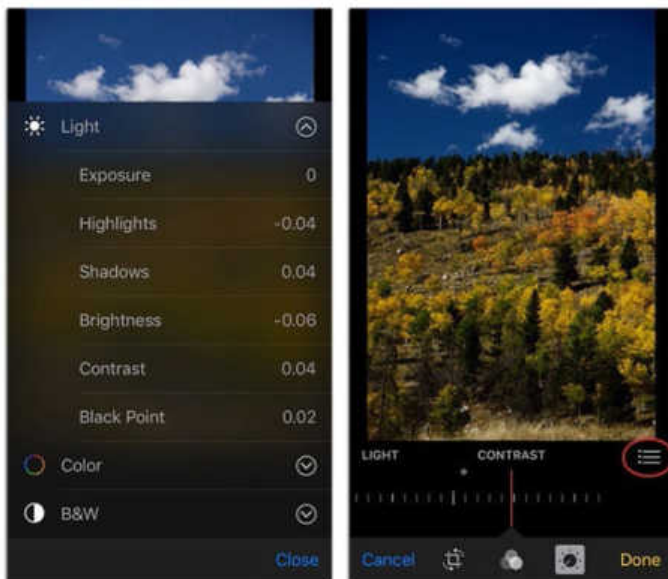applied to your picture.

Smart sliders are smart
because dragging one
adjusts a slew of other
settings (called sub-sliders)
behind the scenes. These
are great for quick, basic
adjustments. For fine
adjustments, you can reveal
a list of the adjustment's
sub-sliders by tapping the down-point-
ing chevron to the right of each
category's name (sub-sliders are
discussed momentarily).

USING THE SLIDERS
To use a smart slider, tap and hold
your finger atop the tiny row of
thumbnails beneath your image and
then drag left or right. For example,
to darken an image using the Light
smart slider, drag to the right so the
red vertical line appears above the
darker thumbnails; to lighten it, drag
to the left so the red line is above the

WHEN YOU TAP to reveal an adjustment's sub-sliders, you see this screen (left). Tap the chevron icon to the right of an adjustment's name to show or hide its sub-sliders. To use a sub-slider, tap its name and it shows beneath your image (right). The gray dot above the slider indicates its original position. To return to the list shown at left, tap the icon circled here (right).

lighter thumbnails. Even simpler, drag
your finger left or right across the
image itself, not the slider.

Once you open a smart slider, you
can access that adjustment's sub-
sliders by tapping the icon that
appears at the upper right of the
smart slider (it looks like a tiny bul-
leted list). When you do, a list of that
adjustment's sub-sliders, as well as
the other adjustments, appears. As
mentioned earlier, tapping an adjust-
ment's name (say, Light) in the list
produces a smart slider while tapping
the down-pointing chevron to its right

reveals a list of its sub-sliders.

To use a sub-slider, tap its name in the list and a slider with tick-marks appears beneath your image. Simply tap and hold your finger atop the tick marks, or the image itself, and then drag left or right. To return to the list of sub-sliders and other adjustments, tap the icon at the upper right of the sub-slider. To use another adjustment—say, Color or B&W—tap its name in the list to open its smart slider or tap its chevron icon to open a list of its sub-sliders.

UNDOING WHAT YOU'VE DONE

Undoing the changes you make in the Adjustments panel in Photos for iOS depends on what you've done. You can undo changes you've made with the Light and Color smart sliders and their sub-sliders by tapping Cancel, and then tapping Discard Changes in the confirmation sheet that appears. This strips away all the edits you made to that image during this round of editing, and spits you out of Edit mode. Alternatively, you can undo specific changes by moving each smart slider (or sub-slider) that you changed back to its original

position, which is indicated by a gray dot above the slider itself (visible in the rightmost screen shot on the previous page).

The Black & White adjustment, on the other hand, works like an off/on switch, enabling you to turn off just the black-and-white bit without undoing any other changes you made during this editing session
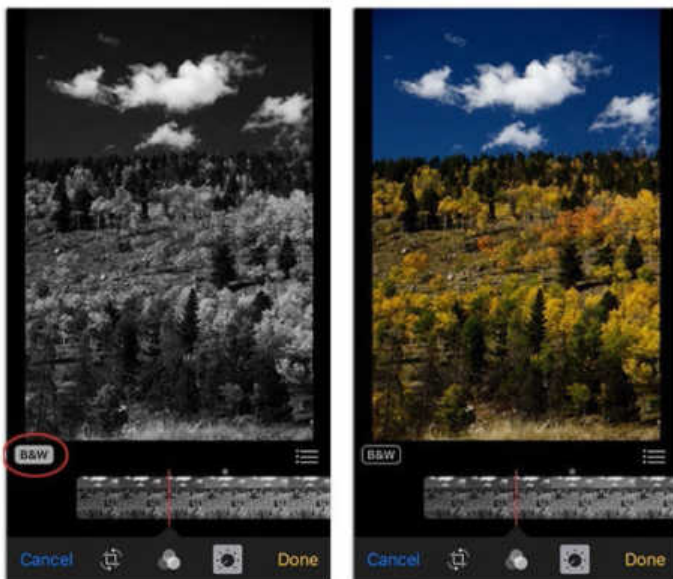
using, say, the Light and Color adjustments. For example, once you tap the B&W icon to reveal its smart slider, you see a tiny B&W label beneath your image. Once you move the smart slider, your image changes from color to black and white and the

HERE THE B&W smart slider was used to turn the image into a black-and-white (left). To turn off the black and white effect, tap the B&W label circled here (right).

label changes from black to gray. To restore your image's color, turn off the black-and-white effect by tapping the B&W label itself (it changes from gray to black).

When you're finished using the Adjustments panel in Photos for iOS, you can do one of the following:

• Close the Adjustments panel by tapping its icon at the bottom of your screen. When you do, its icon changes from gray to black and you can see more editing tools. Alternatively, simply tap the Crop or Filter icons which simultaneously puts the Adjustments panel away and opens those tools.

• Save the edited image and exit Edit mode by tapping Done. Photos saves the new version of the image and you return to the view from whence you came. Don't worry: You can always restore the image to its original state by opening it in Edit mode again and tapping the red Revert button. In the confirmation message that appears, tap Revert To Original and your image returns to the state it was in when you imported it.

• Undo your changes by tapping Cancel. In the resulting confirmation message, tap Discard Changes and Photos removes all the changes you made in this editing session (changes you made in prior editing sessions are preserved).

As you can see, there's more editing power in Photos for iOS than meets the eye. It takes a little getting used to, but the ability to edit your images in such powerful ways on an iOS device, using a free program, is awesome. ■
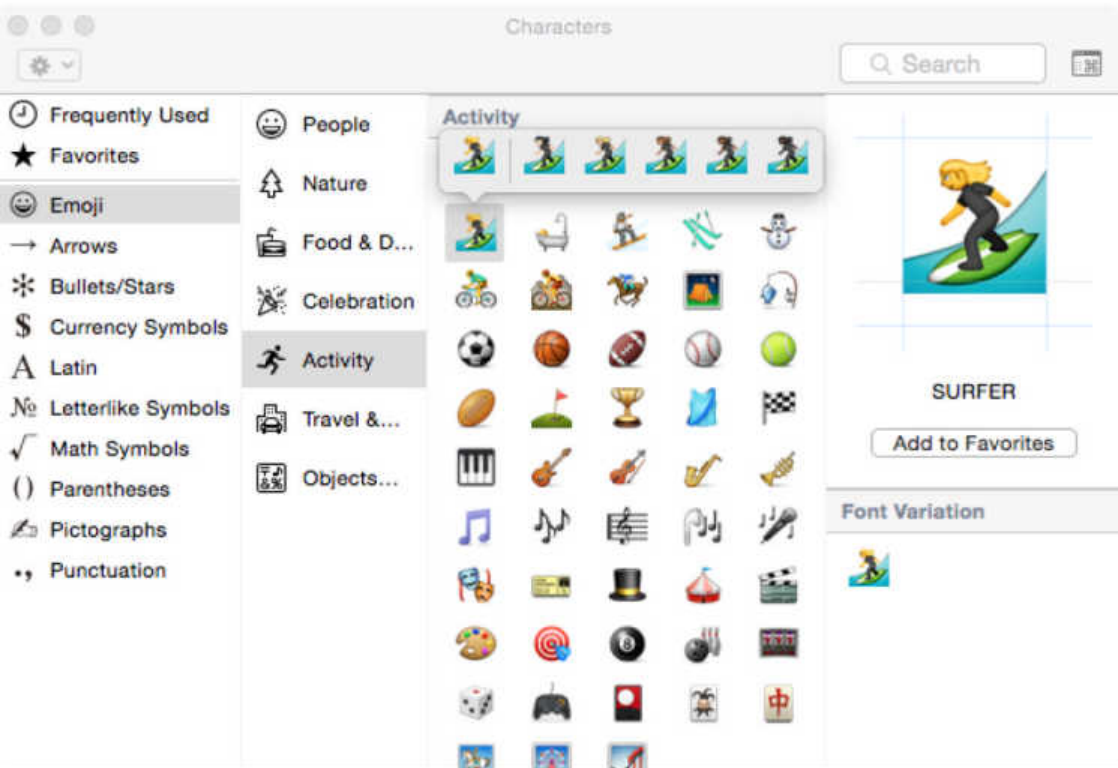
How to access hidden typographic characters in OS X

Ever need to type a euro or infinity symbol, or an umlaut? You're in luck.

BY LESA SNIDER

I f you do much typing at all—especially if you dabble in graphic design or publishing—you'll eventually need hidden typo-graphic characters such as ®, ©, ™, ° and maybe even € and £. Back in 1984, the geniuses at Apple predicted you'd need easy access to these characters, so they built them right into your Mac's keyboard.

But how do you find them until you know where to look? In this column, you'll learn keyboard shortcuts for the handiest hidden characters, as well as how to locate even more using OS X's Keyboard and Character Viewers.

KEYBOARD SHORTCUTS FOR POPULAR HIDDEN CHARACTERS

Whether you're watermarking photos, writing an essay, or hand-crafting a cookbook, the following keyboard shortcuts are well worth memorizing:

- © Option-G
- ® Option-R
- ™ Option-2
- • Option-8
- ° Shift-Option-8
- € Shift-Option-2
- ¢ Option-4
- ... Option-;
- " Option-[
- " Shift-Option-[
- ' Option-]
- ' Shift-Option-]

These keyboard shortcuts work in any application and in *any* field into which you can enter text—even the
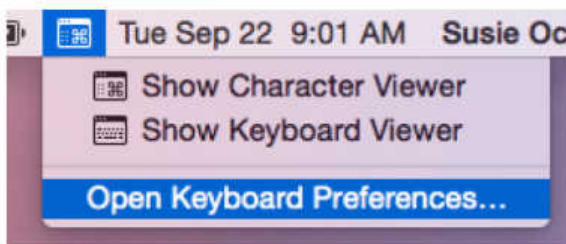
copyright field in Lightroom's Library module and the Info dialog in Photo-shop.

USING THE KEYBOARD VIEWER

If your special character needs extend beyond this short list, cozy on up to OS X's Keyboard and Character Viewers. The Keyboard Viewer displays an onscreen representation of your Mac's keyboard, and lets you insert a character into your text by clicking its key on a virtual keyboard. More importantly, you can access hid-den characters by holding down your keyboard's Shift and Option keys, separately or together.

To summon the Keyboard Viewer, choose Show Keyboard Viewer from the Input menu in your Mac's menu

IF YOU DON'T see this Input icon in your Mac's menu bar, open System Preferences ➜ Keyboard and turn on Show Keyboard & Character Viewers In Menu Bar.

bar. It looks like a tiny window with the Command-key symbol on it or, if you've enabled multiple languages for your keyboard, it looks like a flag instead. If you don't see it, head to System Preferences ➙ Keyboard, and select Show Keyboard & Character Viewers In Menu Bar.

When you first open the Keyboard Viewer, it matches the characters you see on your keyboard, which isn't very exciting. To view more characters, press and hold modifier keys on your keyboard. For example, if you press and hold the Shift key, the top row of keys changes to a tilde, exclamation point, ampersand, and so on. If you press and hold the Option key, you see even more characters, such as ¢ and ∞.

When the Option key is held down, some keys appear in orange to indicate diacritical marks that can be added above some letters. To apply these marks, keep holding down the Option key and then click the orange key in the Keyboard Viewer (or on your physical keyboard) and then click the letter on your physical keyboard that you want to apply it to. Another way to do it is to simply use keyboard shortcuts; for example, to create the umlauted u (ü), type Option-U and then u. For ñ, type Option-N and then n. For é, type Option-E then e. For î, type Option-I then i.

Recent versions of OS X provide

FROM TOP TO bottom, the Keyboard Viewer with no modifier keys held down, with the Shift key held down, with the Option key held down, and with both the Shift and Option keys held down. Modifier keys are grayed out when active.

an additional way to access the accented or alternate versions of a character while typing—hold down

the letter's key for a second and you'll see a list of alternates appear in a popup menu. To use one of the alternates, either type the number that appears beneath it, or click the one you want. To dismiss the menu, either type a different character or press the Escape key. If no additional characters are available for the key you're holding, the menu won't appear. (This menu also doesn't appear if Key Repeat is turned off in System Preferences ➜ Keyboard.)

USING THE CHARACTER VIEWER

But what if you need a hidden character that isn't in the Keyboard Viewer? For example, ℗ is commonly used on audio records (it stands for sound recording copyright), but it doesn't have a keyboard shortcut. In that case, launch the Character Viewer, or choose Characters from the Action (gear) menu at the upper-left of the Fonts palette (summoned in most apps by choosing Format ➜ Font or by pressing Command-T). You can also summon the Character Viewer by choosing Edit ➜ Emoji & Symbols, or pressing Control-Command-Space, in apps such as Pages, Keynote, and TextEdit.
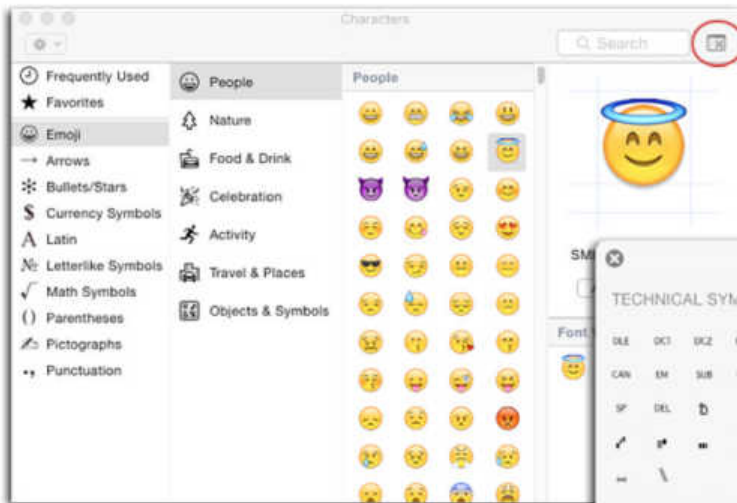
The super handy Character Viewer conveniently clusters the characters in all your active fonts into logical groups. For example, the elusive ℗
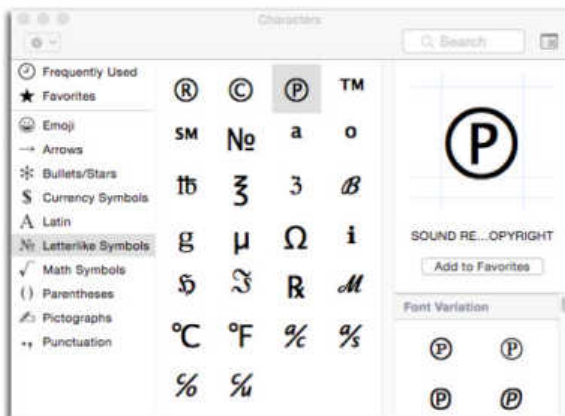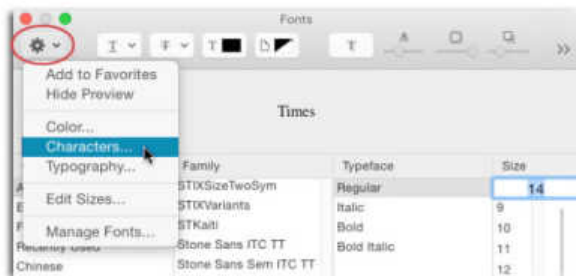
character lives in the Letterlike Symbols group. Click once to see variations of that character in other fonts, and double-click to insert it into your text. The Character Viewer even remembers the characters you use the most—simply click Frequently Used to see them. You can also add a character to your list of Favorites by clicking the Add To Favorites button beneath its preview on the right side of the Character Viewer.

The Character Viewer is also your

FOR EVEN MORE special characters, use the Fonts panel (top) to access the Character Viewer (bottom).

go-to source for finding and using the thousands of picture-based characters in fonts such as Apple Symbols, AppleGothic, and Lucida Grande. For kicks, grab your favorite beverage, settle in, and then click the Pictographs group and scroll through the symbols—you'll spot playing cards, chess pieces, dice, dominos and even astrology symbols (great for party invitations!). Click the Emoji group and you'll quickly become lost in a puffy, colorful world. For access to even more symbols, click the icon at the upper right of the Character Viewer to open a smaller version of the window in which you can scroll to the bottom for technical symbols such as ⌘ and ⏏, and signs such as ♻.

Unfortunately, whereas you can use the Keyboard Viewer in all applications—it floats above almost everything—the Character Viewer is limited to apps that use Apple's Fonts window, such as Pages, TextEdit, and Keynote. Adobe InDesign, Illustrator, and Photoshop have similar functions in the Glyphs panel, which is accessible by choosing Window ➔ Glyphs or Window ➔ Type & Tables ➔ Glyphs (depending on which app you're using). To open QuarkXPress's Glyphs palette, choose Window ➔ Glyphs. If you use Microsoft Word, you're out of luck until Microsoft

releases Word 2016—then choose Edit → Special Characters.

If you find yourself using these character-finding tools very often, save some time and sanity by investing in PopChar (go.macworld.com/popchar), a €30 utility (about US$33 at this writing) from Ergonis that gracefully provides all the features discussed previously and

HERE ARE THE character alternates for the letter O.

more, in any application. As you can see, accessing the wide world of hidden characters is easy once you know where to look. ■

Five uses for gradient masks in Photoshop, Photoshop Elements, and Pixelmator

The gradient tool lets you perform interesting effects to your images.

BY LESA SNIDER

Sitting quietly in the Tools panel of the popular image editors Adobe Photoshop and Photoshop Elements, as well as in the Pixelmator Team's own Pixelmator, is the Gradient tool, a wonderfully useful painting tool that lets you create a soft, gradual transition from one color to another (or several).

But besides using the tool to add color to your designs, you can use it inside a layer mask (referred to as a gradient mask). By setting the two colors of the gradient to black and white—to conceal and reveal, respectively—the tool lets you fade layer content in interesting ways. In this column, you'll discover six handy uses for this creative technique.

FADING IMAGES TOGETHER

A gradient mask lets you quickly fade images together into a collage. With at least two images on separate layers within the same document, position the image you want on the top of your collage at the top of the layer stack. Add a layer mask to it by clicking the circle-within-a-square icon at the bottom of your Layers panel in Photoshop; it's at the top of the Layers panel in Photoshop
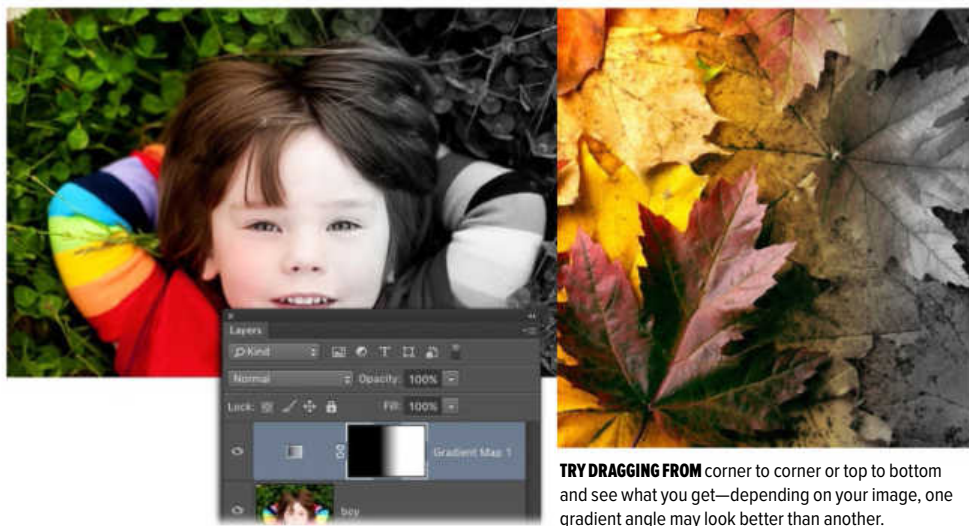

THE GRADIENT MASK is circled here. A color tint was added to the top example to introduce color consistency between the two images.

Elements' Expert Mode (in Pixelmator, choose Layer ➔ Add Layer Mask).

Next, press G to grab the Gradient tool—this keyboard shortcut works in all three apps—and then choose a black-to-white, linear gradient. To do this in Photoshop, trot up to the Options bar and click the down-point-

ing triangle next to the gradient preview. From the resulting menu, click the black-to-white gradient (third from left in the top row), and then click the linear gradient button to the menu's right. In Elements' Tool Options panel, you'll find similar controls. In Pixelmator, once you activate the Gradient tool, click the gradient preview at upper left of your document and in the resulting menu, click the black to white linear gradient icon.

With the layer mask active (you'll see a colored border around it), click and hold your mouse button down where you want the fade to begin, drag in any direction and then let go of your mouse. As you drag, a line represents the width of the fade: The shorter the line (the less distance you drag), the narrower the fade and the harsher the transition; the longer the line, the wider the gradient and the softer the fade. When you release your mouse button, the app plops the gradient into the layer mask, which fades the images together. All three apps automatically update the mask as you drag with the Gradient tool, so keep clicking and dragging until you're satisfied.

FADING COLOR TO BLACK AND WHITE

Softly fading a color image to black and white is another creative and impactful effect. To start, add a black-and-white effect to your image. In Photoshop, click the half-black/half-white circle at the bottom of the Layers panel and

choose Black & White. In Elements' Expert mode, press D to set the color chips at the bottom of the Tools panel to black and white, and then press X until black hops on top.

Next, click the half-black/half-white circle at the top of the Layers panel and choose Gradient Map. In Pixelmator, duplicate your image layer and then, in the Color Adjustments category of the Effects panel, double-click the Black & White icon. In the resulting Black & White palette, adjust the contrast to your liking and click OK. With the duplicate layer active, choose Layer➜ Add Layer Mask and then set the Gradient tool to a black-and-white, linear gradient as described earlier. Click and hold atop your image where you want the color to start fading out, and then drag in any direction for a screen inch or two.

FADING SOLID COLOR INTO A PHOTO

By fading a solid color onto one side of a photo, you create a safe spot for text, which is handy for photographic announcements (invitations, announcements, etc). It's easily done by adding a solid color fill layer at the top of your layer stack and then using the Gradient tool in the mask that comes with the layer. To do it in Photoshop and Elements, choose Layer ➜ New Fill Layer ➜ Solid Color and choose whatever color you want in the
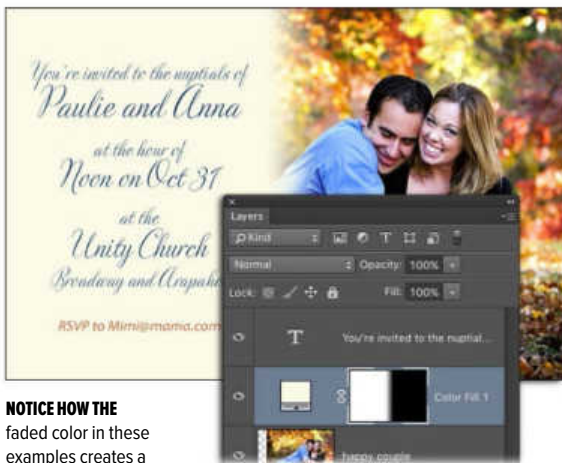
NOTICE HOW THE faded color in these examples creates a safe spot for text.

resulting Color Picker. In Pixelmator, add a new layer at the top of your layer stack, fill it with color, then add a layer mask. Configure the Gradient tool as described earlier and, with the layer mask active, click and drag within your document where you want the color to begin.


CREATING A PHOTO REFLECTION

Reflections are great for adding depth or making an object look like it was

photographed on another surface (say, a reflective table). The basic gist of this technique is to duplicate an image layer and flip it vertically. In Photoshop, you can do this in one fell swoop by pressing Option while choosing Edit ➜ Free Transform ➜ Flip Vertically. In Elements, duplicate the layer and choose Image ➜ Flip Layer Vertical. In Pixelmator, duplicate the image layer and choose Edit ➜ Flip Vertical. Use the Crop tool in those apps to add about two screen inches of extra canvas space at the bottom of your document, and then with the Move tool active, Shift-drag the duplicate layer beneath the original image (they should almost touch).

Add a layer mask to the duplicate layer, grab the Gradient tool, and Shift-drag from the bottom of the image upward to roughly the height you'd

like the reflection to be. Soften the reflection by lowering its layer opacity to about 50 to 75 percent.
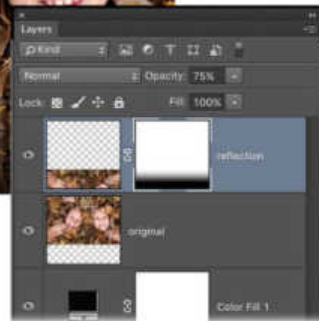
A LAYER FILLED with black was also added to the bottom of this piece.

FADED TEXT

You can use a gradient mask to fade text into a photo, which makes the text feel like it's part of the scene. Once you add some text to your document, add a layer mask to the text layer and then configure the Gradient tool as described above. With the mask active, mouse over to your document and Shift-drag upward from near the bottom of the letters.

As you can see, gradient masks are extremely useful though this list barely scratches the surface of what's possible. The more you use them, the more uses you'll discover. ■
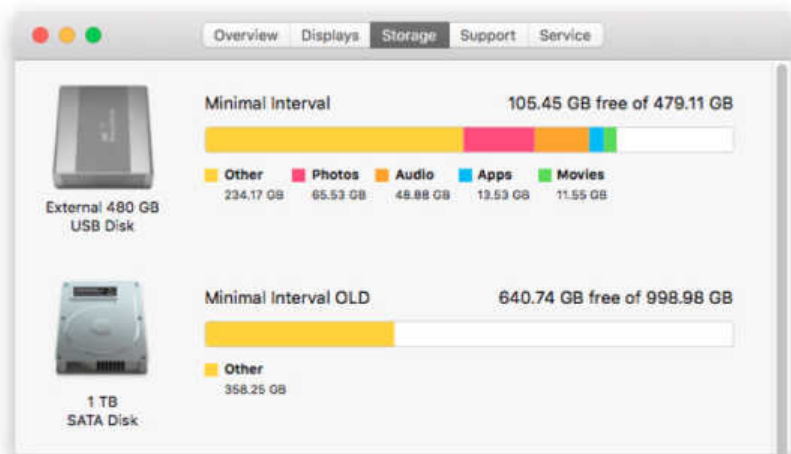

BE SURE TO use a big, thick font—say, Arial Black—so you can see the effect (thin characters won't work).
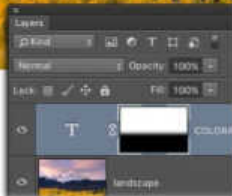
Mac 911

Solutions to your most vexing Mac problems.

BY GLENN FLEISHMAN

THE ABOUT THIS MAC
window reveals
space use on drives
in a graphical display.
Is it accurate?

The case of the missing El Capitan hard-disk space

Q: On my late 2013 model MacBook Pro, which was running Yosemite
10.10.5, my available disk space went from 230GB of free space to 183GB.
I have run Disk Utility, and it tells me all is fine with the SSD 1TB disk.

—Thom Vagt

A: I've seen similar problems at times with my various Macs, and so have
many users. You should pinpoint where the free-space reporting error is first,
however.

OS X reports remaining storage in multiple ways:

- Select ➜ About This Mac, and the Storage tab reveals all attached drives,
  along with breakdowns by coarse file type for bootable ("blessed") volumes.
- In the Finder, select a volume then choose File ➜ Get Info (Command-I). The

General area shows data used and remaining. The bottom of every Finder window with the status bar enabled (View ➝ Show Status Bar) shows remaining storage on the volume that the window represents, too.

- Via Terminal, type **`df -h`** and you'll get a human-readable summary by volume in columns marked Used, Avail, and Capacity (as a percentage). (The Gi or Ti refers to gibibytes and tebibytes, base 2 units for a billion and trillion bytes instead of the base 10 gigabytes and terabytes.)

If these don't agree, it's likely a Spotlight error. Apple relies on Spotlight to mark and calculate remaining storage on the startup volume. You can delete the Spotlight index and rebuild it by following these steps:

1. Open the Spotlight preference pane.
2. Click the Privacy tab.
3. Drag the startup volume into the Privacy window.
4. Click OK at the warning, and the Spotlight index is deleted.

5. Select your startup volume in the privacy list, and click the – (minus) button.

That restarts indexing. This should reset your storage.

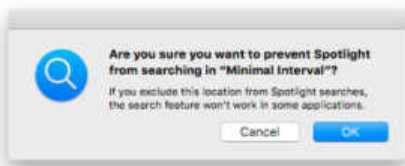If all the numbers agree, it could be temporary caches, which in previous releases of OS X before El Capitan, I've sometimes seen grow to 30GB to 50GB on one of my Macs. Restarting clears the cache and regains that storage

REMOVING THE STARTUP drive from Spotlight indexing can reset a wonky problem with the display of remaining storage on that drive.

space, though the same problem can recur over time.

How to migrate browser-stored passwords to a password app

Q: After reading your article about strong and/or unique passwords, I wonder if you have some advice to make a transition to 1Password? What is going to happen with all

the passwords I've already in place? I use iCloud passwords a lot; should I stop with that practice, and what happens with these passwords after switching to 1Password?

—Nelis van Nahuijs

A: The good news is that the iCloud Keychain can be accessed in OS X via Keychain Access. The bad news is that it's not in a format that can be directly imported to 1Password (or LastPass).

1Password can natively import a few text formats, like comma-separated values and LastPass exports. But it doesn't include any tools for importing from Safari or from Keychain Access. Instead, a 1Password user has created documentation for iCloud Keychain (go.macworld.com/1pwdkeychain) exporting and a script (go.macworld.com/convertto1pwd) that converts many password-storage formats into one compatible with 1Password.

LastPass can import a few dozen formats (including 1Password), and can directly import passwords from inside browsers with the right plug-in, including Safari.

You can also opt to convert gradually: Whenever you visit a site that you don't yet have in 1Password or another app, when you submit a login from Safari, the app will prompt you to add the login.

Please Select
Internet Explorer Password Manager
Firefox Password Manager
Chrome Password Manager
Safari Password Manager
Opera Password Manager
✓ 1Password
Clipperz
Darn! Passwords!
Dashlane
eWallet
Figaro Password Manager
FireForm
HP Password Safe
KeePass
LastPass
McAfee SafeKey
MSI PasswordKeeper
MyPasswordSafe
Passpack
Password Agent

LASTPASS OFFERS A ton of import options from other formats.

How to remove old devices from text forwarding on an iPhone

Q: Do you know how to clear out old devices that I no longer have from the text forwarding screen?

—Dan Mills

A: You'd think this would be straight-forward, no? I started by giving him my off-the-top-of-my-head advice: You can remove devices from your Apple ID account in one of three places:

- At iCloud.com (click the Settings icon (icloud.com/#settings), then any of your devices, then an "X" next to the device)
- The OS X iCloud preference

pane (click Account Details, then Devices, select a device, and click Remove from Account)

• In Settings → iCloud (tap the account name, then devices, then tap the device, and finally tap Remove from Account)

Of course, none of this worked, although it's good to exercise ownership hygiene so that devices you no longer own or have in your possession aren't associated with your account.

Dan had done this and yet the phantom devices lingered in Settings → Messages → Text Message Forwarding. Now, you can disable them from receiving messages; each device has a switch that can be tapped off. But it's still disturbing.

But there's an answer, found in discussions online among users with similar troubles: Change your Apple ID password, and the phantom devices disappear. Whether you're using password-only, two-step verification, or two-factor authentication with your Apple ID, changing the

ICLOUD.COM, IOS, AND OS X all show you the devices associated with your Apple ID, and let you remove them from the account.

password can mean re-entering it and going through a code-based verification step in a lot of places. But it will also solve this problem.

When double-click stops working in El Capitan

Q: After upgrading to El Capitan, I no longer have the capability of double-clicking a folder on the Desktop to open it; I have to right-click and choose Open. It doesn't matter which mouse I am using: Apple's Magic Mouse or the MX Master by Logitech.

—Dexter Rucker

A: Dexter went through the Finder preferences to make sure that he didn't have Open Folders In Tabs set (though that should have opened them in tabs) and examined other potential settings to no avail. I pored over forum postings for any similar reports by others and found

TEXT MESSAGE FORWARDING can show ghosts of devices past, but you can disable them here.

none.

Fortunately, Dexter wrote back with a solution—one I should have thought of, but I haven't seen crop up in years: in the Mouse/ Trackpad

preference pane, the double-click speed had been cranked down to the slowest setting. He's been a Mac user for many years, so he's not a slow clicker. As a result, his "click-click!" wasn't detected, where a "click...click" would have been.

"With some experimenting I found a range on the slider bar that the folder scenario does not occur, which is 4 notches from fast towards the slow position."

Thanks, Dexter for the question and the solution that should help solve the same mystery for others. ∎

Ask Mac 911

We're always looking for problems to solve! Email us at mac911@ macworld.com, tweet them at me (if brief) @glennf, or call 206-337-5833 and leave a voicemail message. (We'll be experimenting with some audio in the future, and may put your question "on the air.")

Mac 911 can't provide direct email responses or answers for every question. For that, turn to Apple-Care, an Apple Store Genius Bar, or the Apple Support Communities.